March 14, 1967 S. ADLER 3,309,252

METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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Fig. 1.

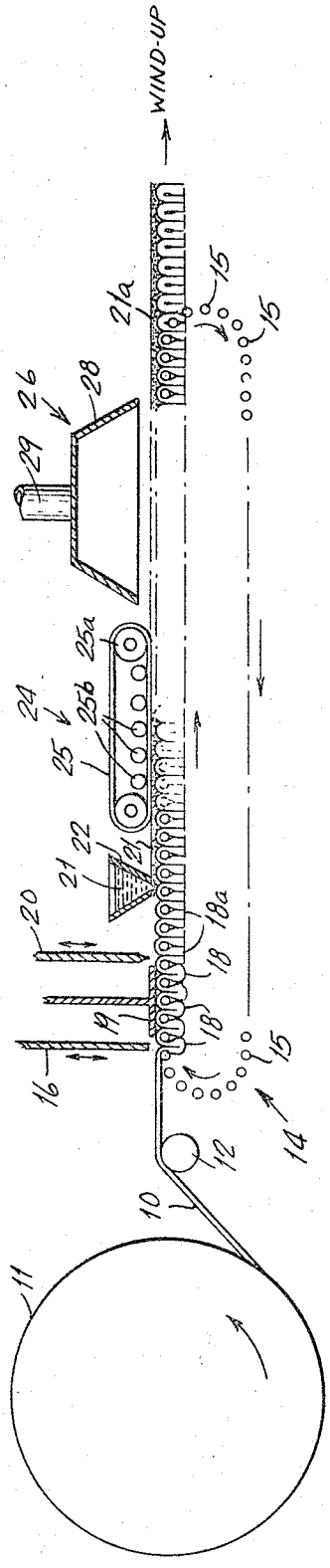


Fig. 2.

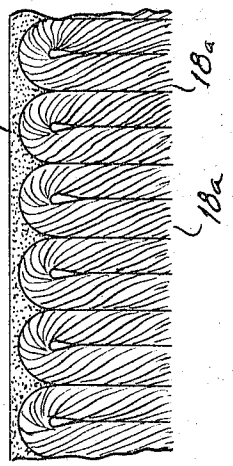
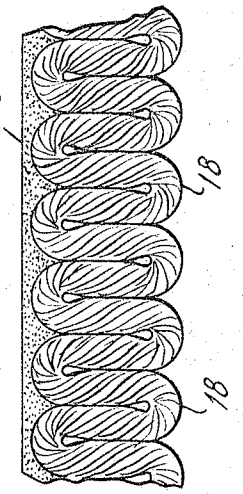


Fig. 3.



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METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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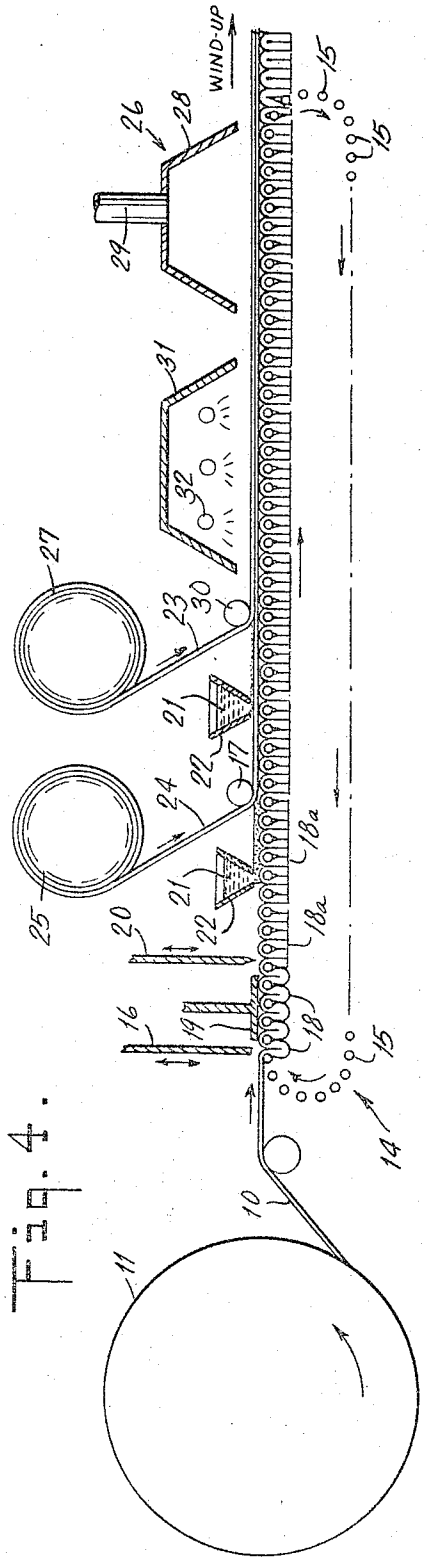

Fig. 4.

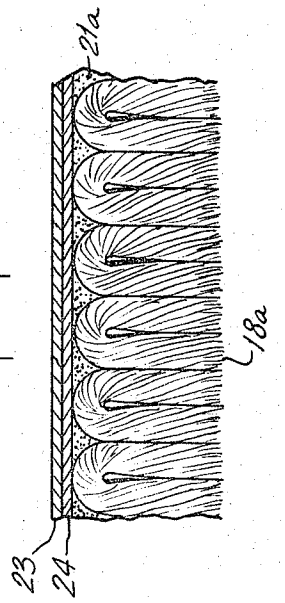

Fig. 5.

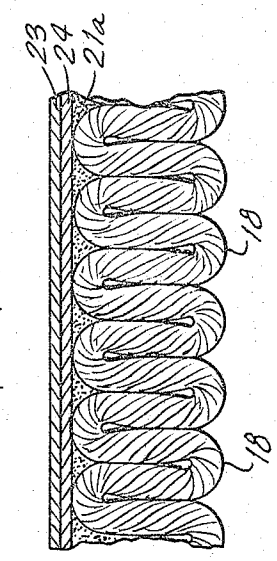

Fig. 6.

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METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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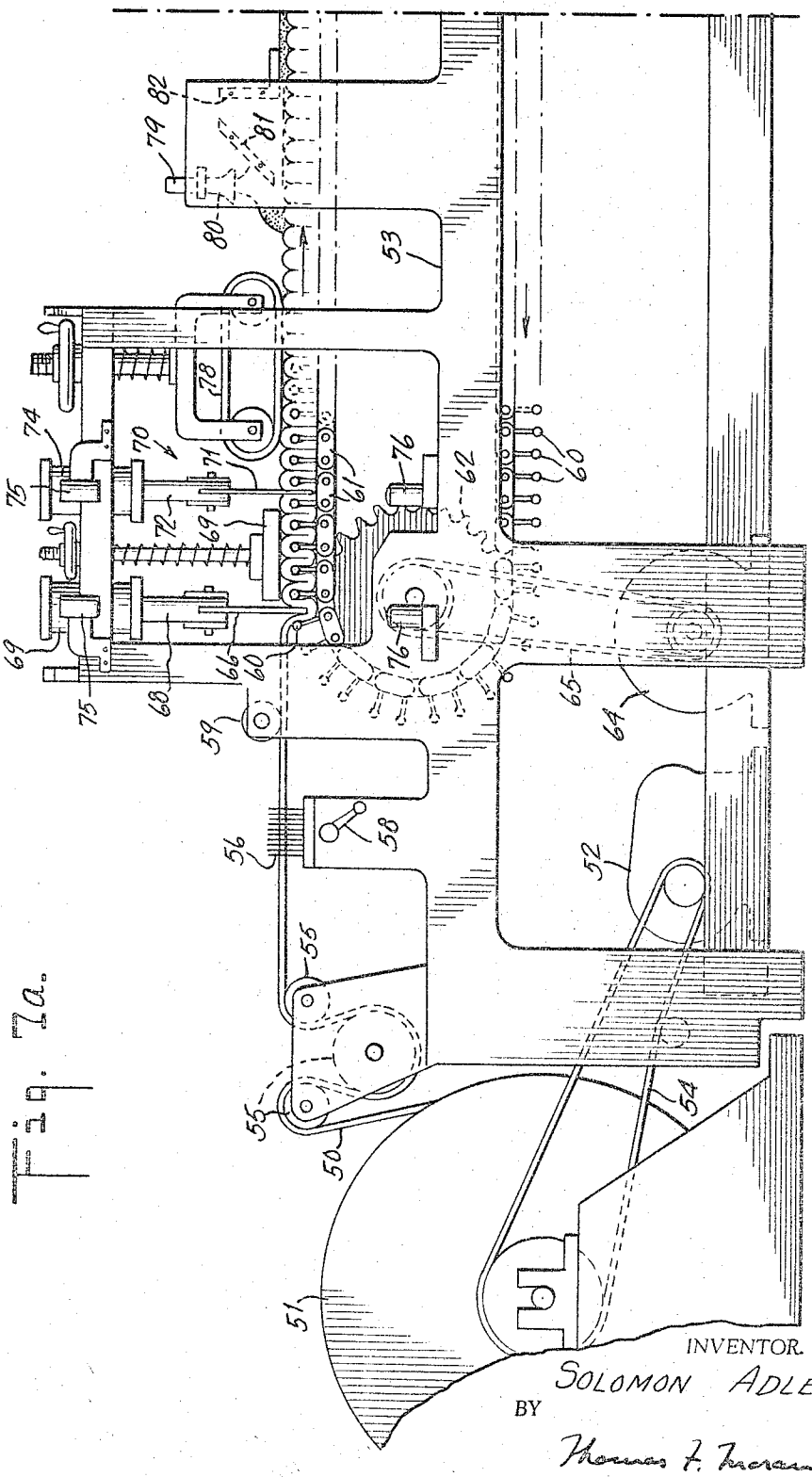

Fig. 1a.

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METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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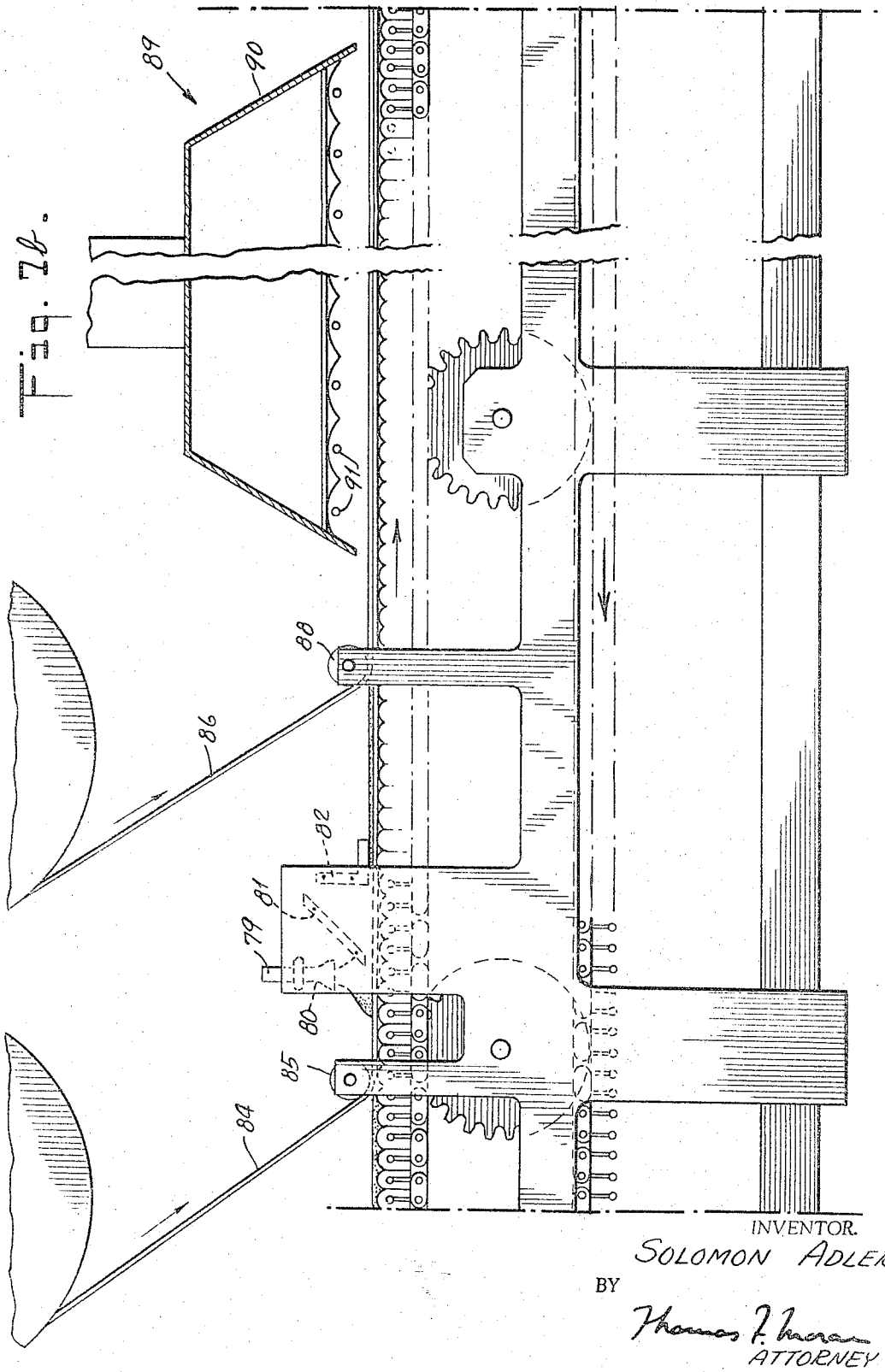
Fig. 7b.



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METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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Fig. 7c.

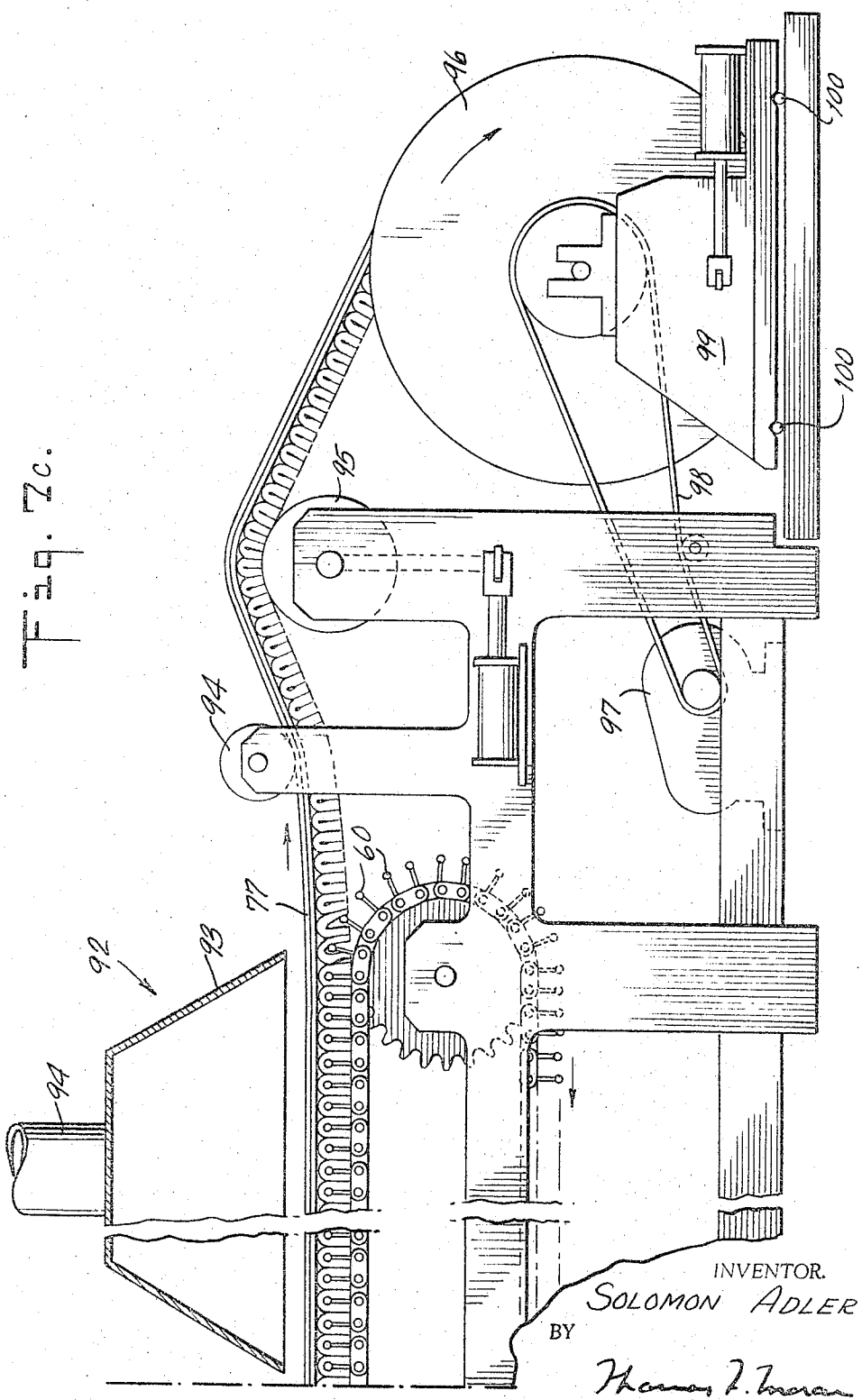

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Fig. 8.

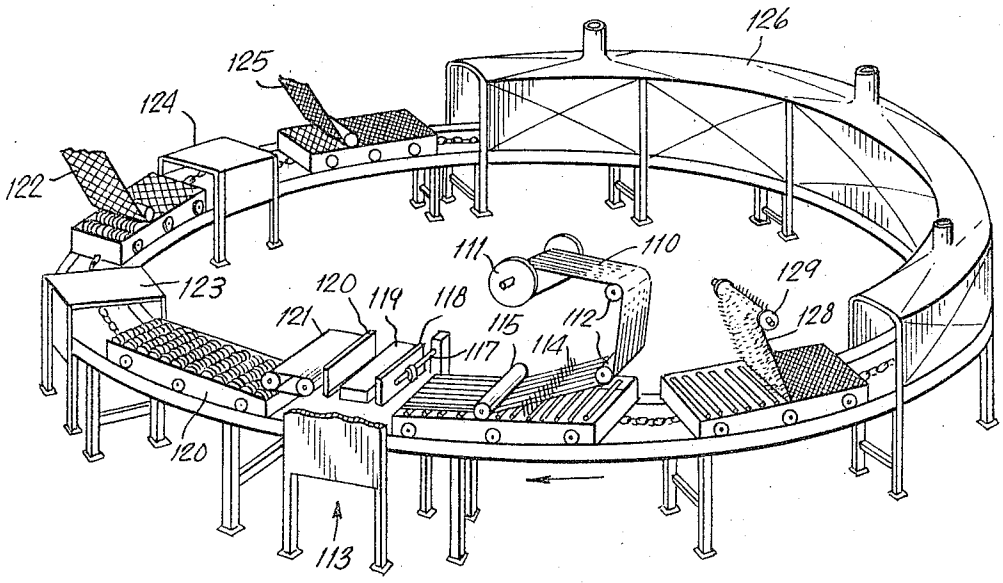
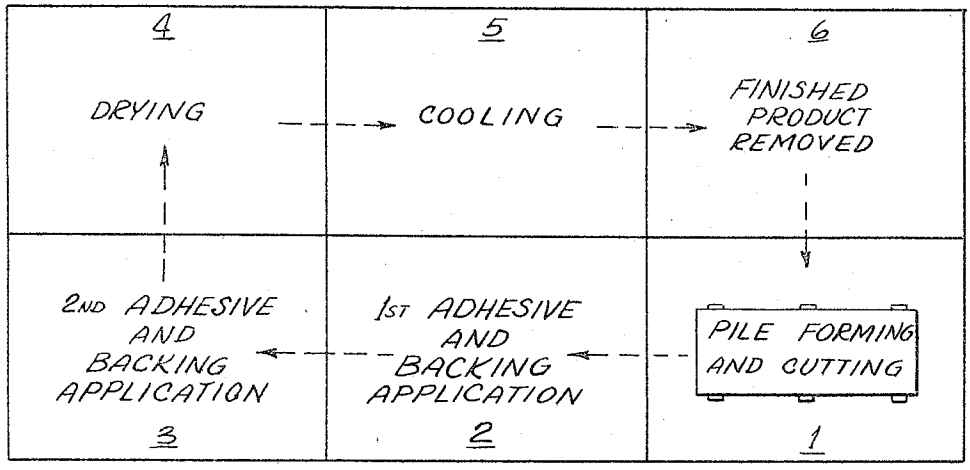


Fig. 9.



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METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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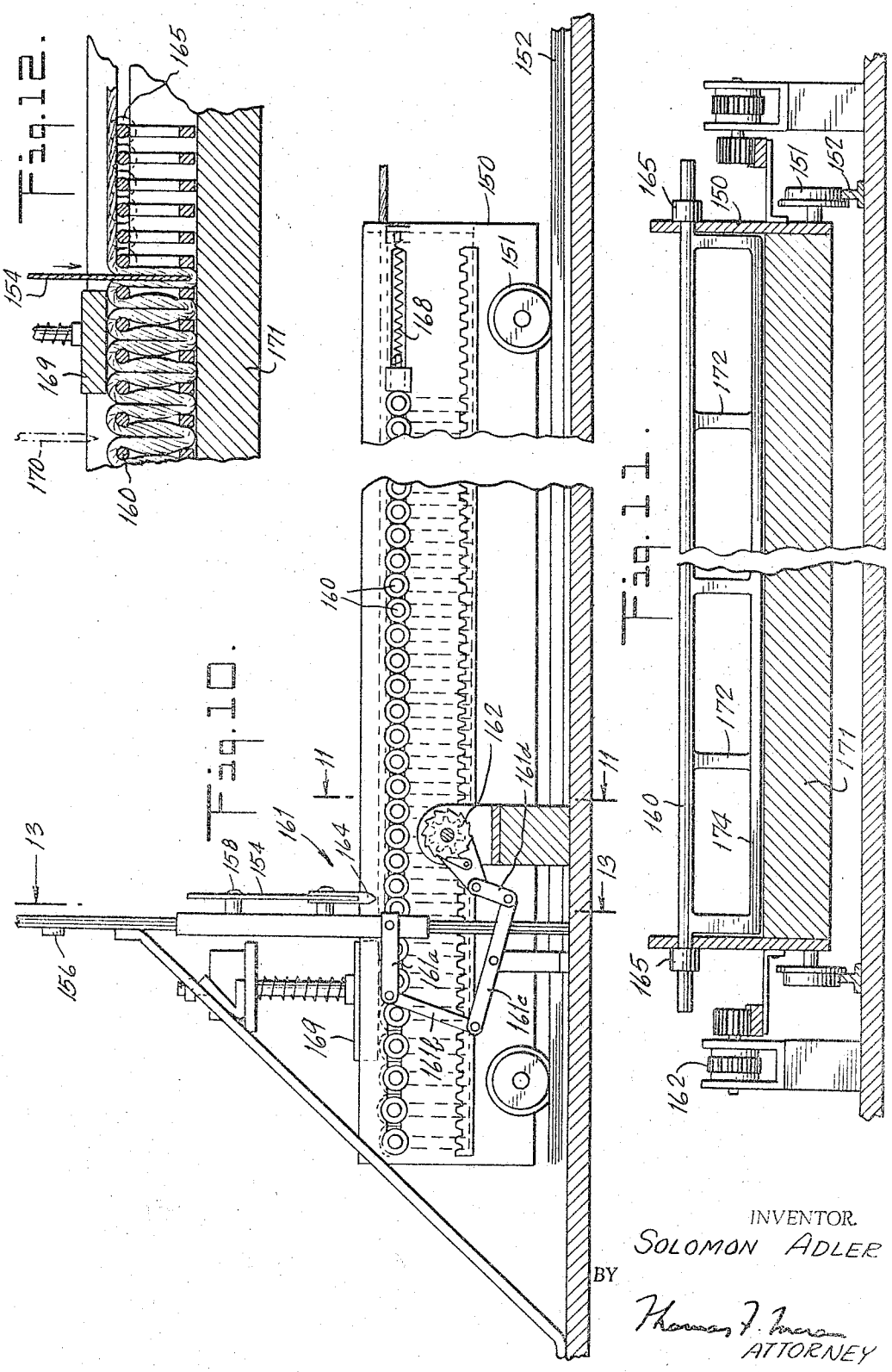

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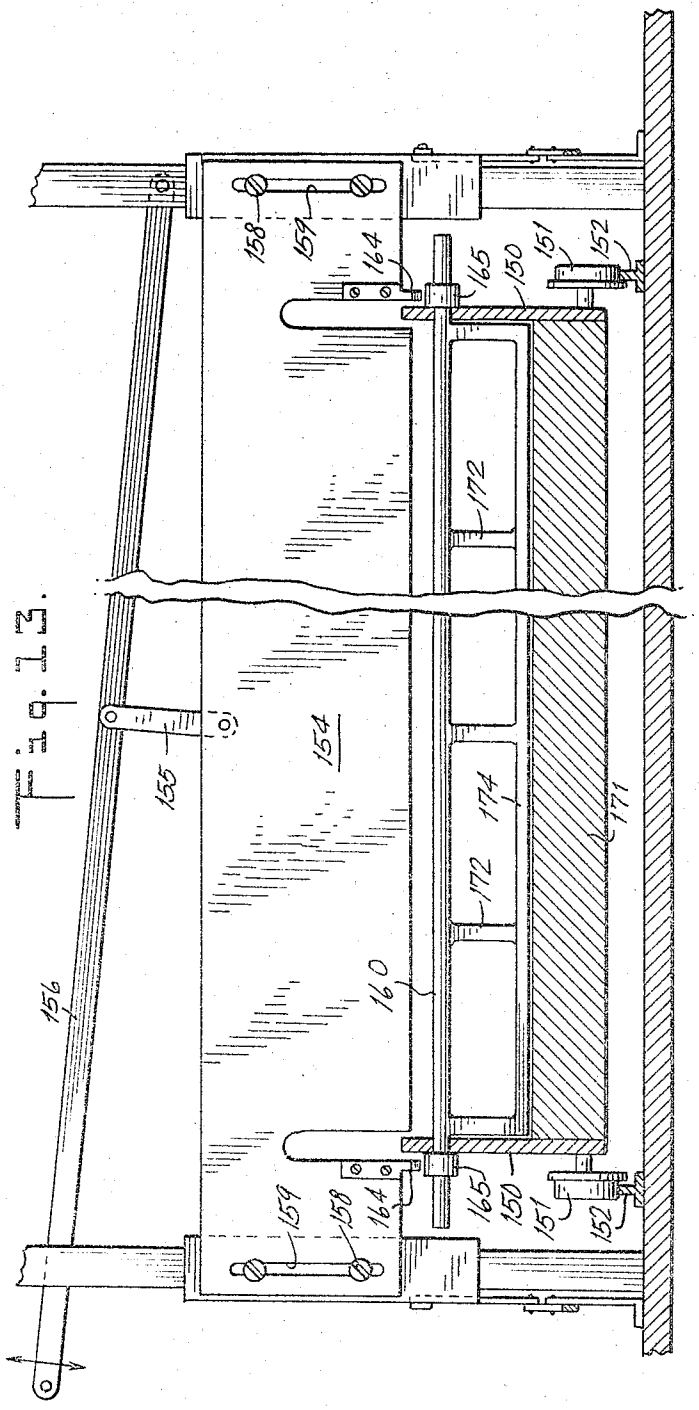

Fig. 13.

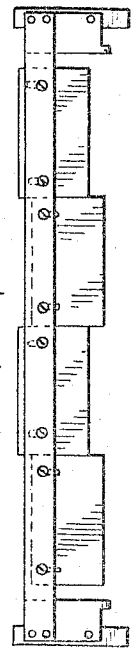

Fig. 15.

Fig. 14.

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Patented Mar. 14, 1967

3,309,252

METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

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Filed Aug. 12, 1963, Ser. No. 301,425
12 Claims. (Cl. 156—72)

This invention relates to pile fabrics. More particularly, this invention relates to pile fabrics, such as carpeting, rugs and the like, and to a method and apparatus for producing the same.

Various methods and apparatus have been employed for the production of pile fabrics, such as carpeting and rugs. In general, those methods and apparatus employing a weaving technique are capable of producing quality pile fabrics exhibiting a dense pile and long service or wearing life. Woven pile fabrics, however, are relatively expensive to produce and as a result woven pile fabrics are costly. Pile fabrics and carpeting have also been prepared by non-weaving techniques, such as by knitting and by tufting. The pile fabrics produced by such techniques generally exhibit a relatively loose pile and are less pleasing in appearance but are capable of being produced at a relatively high rate and inexpensively.

The textile industry, particularly that portion thereof involved in the production of pile fabrics, such as carpeting and rugs, has long been interested in a fast, practical, inexpensive method and apparatus for the production of pile fabrics having a relatively dense pile and exhibiting long wearing life and simulating a woven pile fabric. Those techniques employed and suggested heretofore for the manufacture of such pile fabrics have not been entirely satisfactory.

Accordingly, it is an object of this invention to provide a pile fabric, such as a pile fabric suitable for use as carpeting, rugs and the like, which is capable of being produced at a high rate and relatively inexpensively.

It is another object of this invention to provide a pile fabric simulating a woven pile fabric.

It is another object of this invention to provide an improved method and apparatus for the production of pile fabrics, such as carpeting, rugs and the like.

Still another object of this invention is to provide a method and apparatus capable of producing pile fabrics continuously, at a relatively high rate of production and inexpensively.

Yet another object of this invention is to provide a composite pile fabric made up of yarn material comprising the pile and a formed film material comprising the backing for the pile and serving to bind together the pile, the formed film material together with the yarn material making up an integral pile fabric or structure, together with means and apparatus for puroducing the same.

How these and other objects of this invention are accomplished will become apparent in the light of the accompanying disclosure made with reference to the accompanying drawings wherein:

FIG. 1 is a schematic representation of the various steps and equipment for the production of a pile fabric in accordance with this invention;

FIGS. 2 and 3 are schematic cross sectional views of a pile fabric in accordance with this invention;

FIG. 4 is another schematic view illustrating procedures and apparatus for the manufacture of a pile fabric in accordance with a special embodiment of this invention;

FIGS. 5 and 6 are schematic cross sectional views of pile fabrics produced by the method and apparatus illustrated in FIG. 4;

FIGS. 7*a*, 7*b* and 7*c* comprise in combination a longitudinal view in partial cross section of an apparatus in accordance with this invention for the manufacture of pile fabrics.

FIGS. 8 and 9 schematically illustrate arrangements of apparatus and processing steps in accordance with this invention for the manufacture of pile fabrics;

FIG. 10 is a more detailed fragmentary view in partial cross section of apparatus useful for the manufacture of pile fabrics;

FIG. 11 is a cross sectional view taken along line 11—11 of FIG. 10.

FIG. 12 is a fragmentary cross sectional view showing certain operational features of the apparatus of FIG. 10;

FIG. 13 is a view of the apparatus of FIG. 10 taken along line 13—13; and wherein

FIGS. 14 and 15 illustrate various embodiments of an element useful in the practice of this invention.

In accordance with this invention an improved pile fabric useful as carpeting, rugs and the like comprises an array of pile material bonded to backing material, said backing material making up the binding agent for said pile material. More particularly, a pile fabric in accordance with this invention comprises backing material, U-shaped pile material embedded in said backing material and disposed substantially perpendicularly to said backing material, said U-shaped pile material only being embedded in said backing material at the U-curved portion thereof, said backing material comprising film-forming material applied to and coating said U-curved portion of said pile material.

Referring now to the drawings, particularly FIG. 1 thereof, which schematically illustrates a practice of this invention, warp yarn **10** is fed from warp beam **11** over guide roll **12** onto an endless belt, generally indicated by reference numeral **14**, of loop-forming members **15**, such as wires, bars or similar members, disposed in spaced relationship with respect to each other and transversely with respect to warp yarn **10**. As warp yarn **10** moves on and over loop-forming members **15**, blade **16** is moved into the space between an adjacent pair of loop-forming members **15** depressing the warp yarn therebetween to form loops **18**. Blade **16** is then withdrawn from between loop-forming members **15** and as blade **16** is withdrawn presser foot assembly **19** serves to retain the thus-formed yarn loops **18** between the loop-forming members **15**.

As the endless belt or array **14** of loop-forming members **15** carrying with it the formed loops **18** moves in the direction indicated by the arrows, the formed loops are cut by cutting member **20**, such as a cutting blade, descending between an adjacent pair of loop-forming members **15** and severing the loops of warp yarn therebetween. The resulting cut loops **18***a*, now substantially U-shaped and depending from loop-forming members **15** and held therebetween, move along with belt **14** of loop-forming members **15** and have applied to the surface thereof an amount of adhesive, film-forming material **21** dispensed from a suitable coating or dispensing device **22**. The dispensed, adhesive, film-forming material, such as a vinyl plastisol or latex, coats the U-shaped portion of cut loops **18***a*. The thus-coated warp yarn passes under the influence of a curing device, generally indicated by reference numeral **24**, for effecting the curing of the adhesive, film-forming material applied to the warp yarn. As illustrated the curing device may comprise a band or belt **25** adapted to turn on rollers **25***a* and evenly distribute the coating material onto the warp yarn and to force the coating material into the interstices thereof. Desirably, the surface of belt **25** in contact with the adhesive coating material may be patterned so as to emboss a suit-

able pattern onto the film-forming adhesive material during the curing operation. Radiant heaters **25***b* or the like serve to heat belt **25** to a suitable curing temperature.

After the cured, adhesive, film-forming material and the warp yarn leave the curing operation due to the motion of the endless array or belt **14**, the thus-coated warp yarn material is cooled at a cooling station, generally indicated by reference numeral **26** which, desirably, may comprise means, such as a hood **28**, for directing a flow of relatively cold air supplied via conduit **29** onto the coated warp yarn material. Upon continued rotation or movement of the endless belt, the thus-formed pile fabric comprising warp yarn embedded in the adhesive film-forming material is removed and passed to a suitable wind-up station.

FIG. 2 illustrates in cross sectional view a pile fabric produced in accordance with the method illustrated in FIG. 1 comprising cut yarn **18***a* embedded and adhesively joined at its U-shaped portions within a backing made up of cured, adhesive, film-forming material **21***a*.

FIG. 3 schematically illustrates in cross section another pile fabric produced in accordance with the method illustrated in FIG. 1 and having substantially the same structure, save the pile portion thereof is made up of uncut loops **18**.

In the manufacture of a pile fabric illustrated in FIGS. 2 and 3 a sufficient amount of adhesive, film-forming material should be applied to the looped warp yarn at the U-curved portions thereof so as not only to bind together the looped warp yarn but also to provide an integral, self-supporting structure. The thickness of the adhesive film-forming material may be any suitable thickness effective to impart the desired structural strength and integrity to the finished pile fabric. If desired, a foaming agent may be incorporated in the film-forming material and foamed therein during the curing operation so as to produce a cushiony feel with respect to the pile fabric.

Reference is now made to FIG. 4 of the drawings which represents another embodiment of the practice of this invention and wherein the same reference numerals are employed, as were employed in connection with FIG. 1, to identify the same or equivalent elements. Warp yarn **10** from warp beam **11** is supplied to an endless array or belt **14** of loop-forming members **15** which are disposed and adapted to move in the direction indicated by the arrows. As the warp yarn moves over and onto an adjacent pair of loop-forming members **15**, blade **16** descends therebetween and forms loops **18** of warp yarn between the adjacent pair of loop-forming members. Presser foot **19** serves to retain loops **18** in position between loop-forming members **15** as blade **16** is withdrawn.

As the thus-formed loops **18** of warp yarn move along with belt **14** of loop-forming members **15** cutting blade **20** descends and cuts each loop of warp yarn as it moves directly beneath blade **20**. Thereupon the surfaces of the cut loops **18***a* have applied thereto or have coated thereon an amount of adhesive film-forming material **21** dispensed from coating device **22**.

The thus-coated cut loops **18***a* have applied thereto burlap backing **24** supplied from roll **25**. The burlap backing is joined to the coating of adhesive film-forming material **21** as the burlap backing passes under guide roll **17**. An additional layer or coating of adhesive film-forming material **21** is then applied to the burlap backing material **24**. Thereupon, a second layer of burlap backing material **23** from roll **27** is applied as it passes under guide roll **30**. The resulting composite comprising cut warp yarn material with the two layers of burlap backing material, together with the film-forming adhesive, passes through curing and/or drying station **31** provided with radiant heaters **32** or equivalent heating device so as to cure and/or dry the adhesive and bind the burlap backing material to the cut warp yarn to form an integral composite structure. Thereupon, the cured and/or dried composite pile fabric structure passes to cooling station **26** wherein it is cooled by a flow of relatively cold air supplied to hood **28** via conduit **29**. The resulting substantially finished pile fabric is then separated from the endless array of loop forming members and passed to a suitable wind-up roll.

FIG. 5 illustrates the resulting composite pile fabric structure made up of two layers of burlap backing **23** and **24** bonded to cut yarn loops **18***a* by means of a cured, adhesive, film-forming material **21***a*. FIG. 6 schematically illustrates substantially the same composite pile fabric structure as is illustrated in FIG. 5 save the pile loops **18** are uncut.

In the pile fabric embodiments of this invention illustrated in FIGS. 5 and 6 greater latitude is available in the choice and the amount of binding agent since the important function of the binding agent therein is to adhere the looped warp yarn together and to the backing and is not required to serve as the backing material per se. Structural integrity is imparted to the composite pile fabric by the burlap backing material in cooperation with the adhesive material joining the burlap backing to itself and to the looped warp yarn material.

Various materials well known in the trade may be employed as the warp yarn material. Suitable such materials include cotton, wool and the various other natural fibers of animal and/or vegetable origin and mixtures or blends thereof, as well as the numerous synthetic fibers including nylon, dacron, orlon and blends and mixtures thereof, also fibers or yarns made from the various polyolefinic materials, such as polyethylene and polypropylene. Further, the backing material may comprise any suitable material compatible with the warp yarn material and/or the adhesive agent employed. Suitable backing material includes burlap, canvas, scrim, paper, plastic sheet material, such as polyvinyl chloride, polyethylene and the like. Further, the adhesive bonding agent, as indicated hereinabove, is desirably film-forming. Suitable such film-forming materials obtainable in plastisol or latex form include polyvinyl chloride, polyvinyl acetate and natural and synthetic rubber and the like.

Referring now to FIGS. 7*a*, 7*b* and 7*c*, which illustrate one embodiment of the apparatus in accordance with this invention for the manufacture of the pile fabric schematically illustrated in FIG. 4, warp yarn **50** from warp beam **51** driven by suitable means comprising motor **52** and drive belt **54**, is intermittently supplied over guide rolls **55** through adjustable comb or reed assembly **56**. Handle **58** operatively connected to comb **56** serves to adjust (increasing or decreasing) the distance between the warp yarn depending upon the pile density desired in the finished pile fabric. Additionally, comb **56** serves to keep the warp yarns in parallel relationship. The warp beam drive mechanism is adapted to provide gradual acceleration and deceleration of warp beam **51** so as to provide a desired amount of slack in the warp yarn before being drawn through comb assembly **56**.

Warp yarn **50**, after passing through comb assembly **56**, passes under guide roll **59** onto loop-forming members **60**. Loop-forming members **60**, such as suitably shaped bars or rods, are fixed to links **61** which make up an endless conveyor belt and which is engaged and driven by gear **62**. Gear **62**, in turn, is intermittently driven by motor **64** via drive chain **65**. Like the drive mechanism for warp beam **51** drive mechanism or motor **64** is adapted to provide gradual or uniform acceleration or deceleration. Desirably, drive mechanism **64** advances the array of links **61** in incremental amounts for a short distance, such as about ¼ inch, more or less, at a high rate, such as at a rate of about 2 to 6 incremental advances or movements per second.

As warp yarn **50** advances over a pair of adjacent loop-forming members **60** and becomes positioned beneath blade **66**, blade **66** is moved downwardly by piston **68**

operative within cylinder **69** to depress warp yarn **50** between loop-forming elements **60** to form a loop therebetween. Each downward movement of loop-forming blade **66** forms warp yarn loops between loop-forming members **60**. As blade **66** is withdrawn the array of links **61** and loop-forming members **60** advance a suitable distance so as to permit blade **66** on its next descending stroke to enter the next, adjacent pair of loop-forming members **60** to form additional warp yarn loops therebetween. Adjustable, resiliently-mounted presser foot assembly **69** serves to retain the warp yarn loops in position between the loop-forming members **60**.

Upon continued movement of the array of loop-forming members beneath loop-cutting station, generally indicated by reference numeral **70**, cutting blade **71** descends to intermittently cut the warp yarn loops. Desirably, cutting blade **70** is operated in synchronism with loop-forming blade **66** and is similarly operated by piston **72**, operative within cylinder **74**. Photoelectric cell sensors **75** in cooperation with light sources **76** assure that loop-forming blade **66** and cutting blade **71** descend between the spaces between adjacent pairs of loop-forming members **60**. The resulting cut warp yarn loops pass under loop-retaining belt **78** which is mounted on the machine frame **53** and adjustable to provide desired pressure onto the loops via belt **78** to maintain the loops in position between loop-forming members **60**.

Thereupon, the cut yarn loops pass to an adhesive applying station wherein a liquid adhesive material is supplied via conduit **79** and nozzle **80** onto the top of the warp yarn loops, spreaders **81** and **82** serving to uniformly coat the adhesive material onto the warp yarn.

The adhesive coated warp yarn has deposited thereon a layer of burlap backing **84** supplied from a suitable source, not shown. Burlap backing **84** is applied to the adhesive coated yarn material as it passes under guide roll **85**. An additional amount of adhesive material is then applied to the burlap backing as previously described and a second layer **86** of burlap backing from a suitable source, not shown, is applied to the first deposited layer of burlap backing as the second layer **86** moves under guide roll **88**.

Thereupon, the resulting composite pile fabric structure passes through a drying station, generally indicated by reference numeral **89**, comprising hood **90** provided with radiant heating means **91**, such as infrared ray lamps. While passing through curing and/or drying station **89** the adhesive material and the composite pile fabric are cured and/or dried. Upon leaving the curing and/or drying station **89** the composite pile fabric passes through cooling station, generally indicated by reference numeral **92**. Cooling station **92** comprises hood **93** supplied via conduit **94** with a supply of relatively cool air directed to impinge upon the composite pile fabric as it moves beneath hood **93**.

On leaving cooling station **92** the substantially finished composite pile fabric **77** is separated from the loop-forming members **60** and passes under guide roll **94** and in contact with and over guide roll **95** to wind-up roll **96** which, desirably, is driven in synchronism with warp beam **51** via drive mechanism or motor **97** through drive belt **98**. Wind-up roll **96** is mounted on carriage **99** provided with means for maintaining constant tension on the finished pile fabric. As indicated the wind-up assembly is mounted on transverse rollers **100**.

In the loop-forming operation blade **66** is disposed substantially perpendicularly and transversely with respect to warp yarn **50** and loop-forming members **60**. In operation loop-forming blade **66** descends at a rate from about 3 to 8 strokes per second. On each downward stroke between loop-forming member **60** blade **66** presses the warp yarn into the available space between loop-forming members **60** to form loops therebetween. Blade **66** then is moved upwardly out of the space and the array of loop-forming members moves a distance to position the next adjacent pair of loop-forming members beneath blade **66**. Desirably, so as to facilitate the entry of the blade between loop-forming members **60** and the formation of loops therebetween, means are provided in association with the blade for moving apart the loop-forming members to a slight extent just before blade **66** enters therebetween.

Further, presser foot assembly **69** and retention belt **78** are disposed substantially completely across the array of loop-forming members so as to assure the retention of the loops between the loop-forming members during movement of the array of the loop-forming members.

Loop-forming blade **66** and cutting blade **70** may be a straight edge blade or similarly contoured blades, if desired, to impart a sculptured or contoured effect to the cut loops. If desired, the loops of warp yarn may remain uncut during the manufacture of the pile fabric and subsequently be cut in a separate shearing or cutting operation.

Referring now to FIG. 8 of the drawings, there is illustrated therein a circular track arrangement for the production of pile fabric in accordance with this invention. As schematically illustrated therein, at loop-forming station, generally indicated by reference numeral **113**, warp yarn **110** from warp beam **111** is supplied over roller **112** through comb **114** and under guide roller **115** to loop-forming station comprising cutter assembly **117**, loop-forming blade **118**, presser foot **119**, cutting blade **120** and retaining belt **121**. The aforesaid loop-forming operations are carried out so as to produce on carriage **120** an array of looped warp yarn material.

Carriage **120** then moves to adhesive applying station **123** and the surface of the looped warp yarn material is coated with a suitable adhesive material. Thereupon layer **122** of burlap backing is applied before going to a second adhesive applying station **124** wherein a second coat of adhesive is applied. Thereupon a second layer **125** of burlap backing is applied and the resulting assembly passes through a drying and cooling tunnel **126**. Upon leaving drying and cooling tunnel **126** the resulting finished pile material **128** is removed onto wind-up roll **129** and carriage **120** is then available for the formation of additional loops of warp yarn material thereon. As illustrated in the drawing, the arrangement of FIG. 8 is suitable for the manufacture of pile fabric in fixed lengths and widths depending upon the length and width of the carriages. Moreover, the aforesaid operations can be carried out on a substantially continuous basis for the substantially continuous production of pile fabric.

Instead of a circular track arrangement, such as illustrated in FIG. 8, carriage **120** may be adapted and disposed to move in a straight line path. FIG. 9 illustrates this embodiment of the practice of the invention wherein the various operations in the manufacture of a pile fabric in accordance with this invention are indicated and their relationship to each other.

Referring now to FIGS. 10–13 of the drawings, there is illustrated therein in greater detail a particular embodiment of apparatus in accordance with this invention for the manufacture of pile fabric. Carriage **150** mounted on flanged wheels **151** adapted to move along rails **152** is intermittently moved beneath loop-forming blade **154** which is connected to bar **155**. Bar **155**, in turn, is connected to lever **156** which is adapted for up and down movement so as to move blade **154** in an up and down direction, the up and down movement of blade **154** being guided by pins **158** disposed within slots **159** provided on each side of blade **154**.

As blade **154** is moved up and down so as to enter the space between loop-forming members **160** through suitable linkage indicated by reference numeral **161** and comprising levers **161***a*, **161***b*, **161***c* and **161***d* and ratchet **162**, loop-forming members **160** are intermittently advanced so that upon the next descending stroke blade **154** enters the space between the next successive loop-

forming members. The penetration of blade **154** between the loop-forming members **160** is aided by a wedging blade **164** disposed on either side of blade **154**.

In operation wedging blade **164** forces apart collar spacers **165** fixed to each end of loop-forming members **160** and increases the available space between loop-forming members **160** for the penetration of blade **154** therebetween. Collar spacers **165** are useful to provide space between the loop-forming members **160** for the loops of warp yarn and are maintained in direct contact with each other by means of pusher spring **168**. Loop-forming members are accordingly resiliently arrayed so that as wedging blade **164** moves between a pair of adjacent collar spacers **165** the collar spacers and loop-forming members are urged against spring **168**.

Presser foot **169** is provided adjacent blade **154** to retain the loops in position between the loop-forming members, see particularly FIG. 12. If desired, knife blade **170** actuated in synchronism with blade **154** is provided to cut the loops thus formed between the loop-forming members **160**, cutting being effected as the knife descends between a pair of loop-forming members and bears against the upper surface of member **171**.

As illustrated, see particularly FIGS. 11 and 13, loop-forming members **160** made up of an upper rod, such as a rod having a circular cross section, joined by connecting bars **172** to lower rod or bar **174**, preferably of smaller cross section than the upper rod. The loop-forming members desirably are supported by and/or contact the upper surface of floor member **171**.

FIGS. 14 and 15 illustrate profiles of various loop-forming blades useful for achieving a sculptured effect on pile fabrics prepared in accordance with this invention. The loop-forming blade assembly of FIG. 14 imparts an undulating surface to the pile fabric and the loop-forming blade of FIG. 15 imparts a more sharply defined ridge effect.

As will be apparent to those skilled in the art in the light of the foregoing disclosure, many modifications, substitutions and alterations are possible in the practice of this invention without departing from the spirit or scope thereof.

I claim:

1. A method for producing a pile fabric, such as carpeting, rugs and the like, which comprises disposing yarns over loop-forming members, said loop-forming members being disposed transversely with respect to said yarns and spaced from each other, depressing said yarns between said loop-forming members to form loops of yarn therebetween while maintaining said loops of warp material between said loop-forming members by pressing said warp material onto and against the top of said loop-forming members, cutting said loops of yarn formed between said loop-forming members at the bottom of the loop portion thereof which is depressed between said loop-forming members while maintaining said loops of yarn in position between said loop-forming members, applying adhesive material onto the yarn portions supported on said loop-forming members, said yarn portions making up the bases of the thus-formed and cut loops and applying backing material to the adhesive coated yarn portions to bind the thus-formed and cut loops to said backing material.

2. A method for producing a pile fabric, such as carpeting, rugs and the like, which comprises advancing warp material from a warp beam over and in contact with loop-forming members, said loop-forming members being disposed transversely with respect to said warp material and spaced from each other, interrupting the advancement of said warp material and depressing said warp material between an adjacent pair of said loop-forming members to form loops of warp material therebetween, additionally advancing and depressing said warp material in substantially the aforesaid sequence of operations to continuously form an array of loops between each successive

pair of loop-forming members while maintaining said loops of warp material between said loop-forming members by pressing said warp material onto and against the top of said loop-forming members, applying adhesive material onto the warp material portions supported on said loop-forming members, said warp material portions making up the bases of the thus-formed loops and applying backing material to the adhesive coated warp material portions to bind the thus-formed loops of said backing material.

3. A method in accordance with claim **2** wherein as said warp material is depressed between an adjacent pair of loop-forming members to form loops of warp material therebetween and the thus-formed loops are cut.

4. A method in accordance with claim **2** wherein as said warp material is depressed between an adjacent pair of loop-forming members to form loops of warp material therebetween, other, previously formed loops of warp material are cut.

5. Apparatus useful for producing a pile fabric, such as carpeting, rugs and the like, comprising an array of spaced parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for depressing said warp material between a pair of adjacent loop-forming members, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members, means for cutting said warp material at the bottom of the loop portion thereof which is depressed between said loop-forming members and means for applying adhesive film-forming material to the surfaces of said warp material on said loop-forming members.

6. Apparatus for producing pile fabric, such as carpeting, rugs and the like, comprising an array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for interrupting the advancement of said warp material over said loop-forming members, means for depressing said warp material between a pair of adjacent loop-forming members as the advancement of said warp material thereover is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members and means for applying adhesive film-forming material to the surfaces of said warp material on said loop-forming members.

7. Apparatus for producing a pile fabric, such as carpeting, rugs and the like, comprising an array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for interrupting the advancement of said warp material over said loop-forming members, means for depressing said warp material between a pair of adjacent loop-forming members as the advancement of said warp material thereover is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members and means for applying adhesive film-forming material to the surfaces of said warp material on said loop-forming members.

8. Apparatus for producing a pile fabric, such as carpeting, rugs and the like, comprising an array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for interrupting the advancement of said warp material over said loop-forming members,

means for depressing said warp material between a pair of adjacent loop-forming members as the advancement of said warp material thereover is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members, means for cutting said warp material at about the middle of that portion depressed between said loop-forming members and means for applying adhesive film-forming material to the surfaces of said warp material on said loop-forming members to provide a backing for said warp material.

9. Apparatus useful for producing a pile fabric, such as carpeting, rugs and the like, comprising an array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for interrupting the advancement of said warp material over said loop-forming members, means for depressing said warp material between a pair of adjacent loop-forming members as the advancement of said warp material thereover is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop forming members and means for cutting said warp material at that portion thereof depressed between said loop-forming members.

10. Apparatus useful for producing a pile fabric, such as carpeting, rugs and the like, comprising an array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for interrupting the advancement of said warp material over said loop-forming members, means for depressing said warp material between a pair of adjacent loop-forming members as the advancement of said warp material thereover is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members, means for cutting said warp material at that portion thereof depressed between said loop-forming members and means for applying adhesive film-forming material to the surfaces of said warp material on said loop-forming members.

11. Apparatus useful for producing a pile fabric, such as carpeting, rugs and the like, comprising an array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially

side-by-side coplanar relationship, means for advancing warp material over and in contact with said array of loop-forming members, means for interrupting the advancement of said warp material over said loop-forming members, means for depressing said warp material between a pair of adjacent loop-forming members as the advancement of said warp material thereover is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members, means for cutting said warp material at that portion thereof depressed between said loop-forming members, means for applying adhesive material agent to the exposed surfaces of said warp material on said loop-forming members and means for applying backing material to the thus-adhesive coated surfaces of said warp material.

12. Apparatus useful for producing a pile fabric, such as carpeting, rugs and the like, comprising a closed, endless array of spaced, parallel-aligned, loop-forming members, said loop-forming members being disposed in substantially side-by-side coplanar relationship, means for interruptingly advancing said array of loop-forming members a distance equal to the distance separating the mid-points of an adjacent pair of loop-forming members, means for feeding warp material over and in contact with said array of loop-forming members as said array is interruptingly advanced, means for depressing said warp material between a pair of adjacent loop-forming members as the movement of said array of loop-forming members is interrupted, means for pressing said warp material onto and against the top of said loop-forming members to retain said warp material between said loop-forming members, means for applying adhesive material to the exposed surfaces of said warp material on said loop-forming members and means for applying backing material to the thus-coated surfaces of said warp material.

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