May 31, 1938.

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APPARATUS FOR ERECTING THE NAP OF A FABRIC

Filed Dec. 9, 1935

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

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My invention relates to improvements in apparatus for erecting the nap of a fabric. An object of my invention is the provision of a novel apparatus for easily and quickly raising the nap of a fabric. Still another object of my invention is to provide an apparatus with novel means for supporting a garment in a manner adapting it for quick and easy treatment in raising the nap thereof, and a novel nozzle for forcing steam through the fabric.

Another object of my invention is the provision of a novel apparatus for raising the nap of a garment, such as a velvet dress, which is simple, cheap to make and operate, which is strong, durable, not likely to get out of order, and which is efficient in its operation.

The novel features of my invention are herein-after fully described and claimed.

In the accompanying drawing, which illustrates the preferred embodiment of my invention, Fig. 1 is a plan view, partly broken away of my improved apparatus shown supporting a dress to be treated, portions of the dress being broken away, and parts omitted. Fig. 2 is a top view of the air conductor having the blower. Fig. 3 is a plan view, partly broken away of the skirt supporting member. Fig. 4 is a side elevation of the nozzle and parts connected therewith, partly broken away, shown applied operatively to a piece of velvet shown in edge elevation. Fig. 5 is an enlarged elevation of the nozzle, partly broken away. Fig. 6 is a section on the line A—A of Fig. 5. Fig. 7 is an end view of the nozzle. Fig. 8 is an enlarged section on the line B—B of Fig. 3.

Fig. 9 is an enlarged perspective view of the member which releasably attaches the skirt supporting member to the air conductor. Similar characters of reference designate similar parts in the different views.

45 1 designates an air conductor which includes a blower 2 having a rotary shaft 3 on which is mounted a pulley 4. A belt 5 connects the pulley 4 with a pulley 6 on the driving shaft 1 of a motor of any usual type.

50 When the motor rotates the blower shaft 3 counterclockwise, as viewed in Fig. 1, the radial blades 9 of the blower will force air through the conductor 1 and out of the upwardly inclined outlet portion 10 of the air conductor. The air discharged from the outlet portion 10 is designed to distend a garment, such as a velvet dress 11, disposed so as to receive therethrough axially the discharged current of air.

For engaging and expanding and revolving the bottom portion of the skirt of the garment 11, there is provided a supporting member comprising two crossed bars 12 welded or otherwise integrally attached to each other, and having at their intersection a transverse hole through which extends a shouldered screw 13 on which the supporting member 12 is revolvable. Figs. 1, 3 and 8. The crossed bars 12 have respectively at their outer ends resilient T shaped radial portions 14, which are adapted to be bent toward each other inwardly, as shown in solid lines in Fig. 1, and made to engage the inner side of the bottom portion of the skirt of the dress 11. By permitting the engaged radial portions 14 to expand, the bottom portion of the skirt will be held expanded. The lower shouldered threaded end of the screw 13 is tightly fitted in a threaded hole 15 of an arm 16 of a hook member 17, which has an arm 18 parallel with the arm 16, and disposed between and parallel with two arms 19 of the hook member. A collar 20 is disposed between the arm 16 and the adjacent cross bar 12.

Two crossed bars 21 and 22 are mounted rigidly in the outer end of the discharge or outlet portion 10. The two arms 19 are adapted to engage the opposite edges respectively of the bar 22 and the under side of the bar 23, and the arm 18 is so spaced above the arms 19 that it will engage the upper side of the bar 23, as shown in Figs. 1 and 8. To remove the supporting member 12, the hook member 17 is slid upwardly to the left, as viewed in Fig. 1, thus releasing the bars 22 and 23 from holding engagement with the arms 19 and 18. Reversing this operation operatively engages the hook member with the cross bars 22 and 23 and causes the hook member 17 to revolve support the member 12 in its operative position.

For revolvably supporting the upper or neck portion of the dress 11 a garment hanger 24 of usual type engages the upper part of the dress 11 in a well known manner. A hook 25 engaging the garment hanger 24 has swivel engaged with a link 26 attached to one end of a rope 27 supported on a pulley 28 and having attached to its other end a weight 29.

The pulley 28 is disposed so as to position the hook 25 with its axis alined with the inclined axis of the skirt supporting member 12, whereby when the latter is revolved, the dress 11 will...
be revolved and with it the hook 25 and hanger 24.

The weight 29, through the intermediacy of the rope 27, link 26, hook 25, and hanger 24, holds the dress stretched lengthwise.

When the motor revolves the blower blades 9, a current of air will be discharged from the conductor 1 into and lengthwise through the dress 11, thereby distending the latter. While the dress 11 is thus distended, steam under pressure is discharged forcibly from the inside of the dress outwardly through the fabric thereof, thus moistening and lifting and causing to stand outwardly nap which has flattened on the outer side of the dress.

The air under pressure in the dress while the latter is having the steam projected through it effects a triple function.

The air distends the dress so that when the steam is applied to the latter it will not collapse and interfere with the projection of the steam through the fabric.

The air by distending and stretching the dress laterally enables the steam to pass with less resistance through the interstices in the fabric wall.

The air quickly dries the fabric after the steam has erected the nap on the outer side of the fabric, thus causing the nap which has been raised to retain its standing position.

For projecting steam through the fabric I provide a nozzle having a stem 30, having one end connected to a hose 31 adapted to be connected to a source of steam, as a boiler, not shown, where steam is retained under pressure, Figs. 1 and 4.

The discharge end of the stem 30 extends laterally and is externally threaded, as shown in Fig. 6. A thimble 32 has its outer end provided with discharge openings 33, the inner end of the thimble being internally threaded and fitted on the threaded discharge end of the stem 30.

The thimble 32 at its inner end engages a collar 35 which encircles the stem 30, and holds the collar tightly on the stem.

Two U shaped guard members 36 have their inner ends fastened to and extending forwardly from the outer side of the collar 35. The guard members 36 are adapted to slide against the inner side of the fabric of the dress 11, and hold the discharge end of the nozzle spaced from the fabric, so that the latter is not liable to be damaged by heat from the nozzle tip or thimble 32.

In the stem 30 is provided a shut off valve 37 of any common type, which is opened and closed by an operating lever 38 pivoted to the stem 30, Fig. 4.

In Fig. 4 is shown in edge elevation a piece of fabric, as of velvet, 39 the outer side of which is provided with a nap, some of which, designated by 40 lies flattened against the body 39. When the nozzle is operated to discharge steam against the inner side of the fabric 39 opposite to the flattened nap 40, the steam being projected forcibly through the fabric body 39 will bring the nap on the outer side thereof to the erect or standing position, designated by 41 in Fig. 4.

What has just been described takes place when the nozzle is inserted into the dress 11 and is moved along with the guard members 36 bearing against the inner side of the fabric of the dress. When the valve 37 is opened and the steam is discharged from the nozzle through the fabric, the nap on the outer side of the dress will be made to stand out from the body, and the air will distend the dress and dry the fabric.

By having the dress revoluble on an inclined axis, as shown in Fig. 1, the nozzle can be easily operated by inserting it from the lower end of the dress, and the latter may be revolved on its axis, as the nap is being erected, to enable easy access of the nozzle to all the inner part of the dress.

In the operation of the apparatus, the dress 11 to be treated has its shoulder portions engaged by the hanger 24. The resilient arms 14 of the member 12 are sprung inwardly at their outer end portions and engaged with the inner side and bottom portion of the same, as shown in Fig. 1. The weight 29 draws the dress taut lengthwise. The blower is then operated to discharge air from the conductor 1 lengthwise through the dress, thereby distending the latter so as to hold it in condition for the projection of the steam outwardly through the dress fabric.

The nozzle is then inserted into the dress, and the steam caused to be discharged from the nozzle. The latter is then operated as has been described, by pressing the guard members outwardly against the inner side of the distended dress, and moving the nozzle so as to slide the guard members against the dress from one place to another, as the nap is erected by the steam discharged through the fabric.

Modifications within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:

1. In an apparatus for erecting the nap on the outer side of a garment, means for engaging the garment at its upper and lower end portions and supporting it in an inclined position, means for distending the supported garment with air, and means manually insertable and movable in all directions in the garment for forcibly projecting steam outwardly through the fabric of the distended garment.

2. In an apparatus for erecting the nap on the outer side of a garment, means for engaging the garment at its upper and lower end portions and supporting it revoluvely on its axis in an inclined position, means for distending the supported garment with air, and means manually insertable and movable in all directions in the garment for forcibly projecting steam outwardly through the fabric of the distended garment.

3. In an apparatus of the kind described, a supporting member having resilient radial arms adapted to be bent inwardly and to engage and hold expanded one end of a garment, a support, an attaching member rotatable on said supporting member and having means for releasable holding engagement with said support, and means independent of said support anchoring and revoluvably supporting the other end of the garment.

4. In an apparatus of the kind described, means for revoluvably supporting a garment on its longitudinal axis, and a nozzle removably insertable into the garment so supported and having an outlet through which steam is adapted to be projected laterally outwardly through the fabric of the garment, said nozzle having a guard member projecting outwardly beyond said outlet and adapted to have traversing engagement with the inner side of said garment and to hold the latter spaced from said outlet.

5. In an apparatus of the kind described, an air conductor, means for forcing air through said conductor, means for supporting and holding ex-
panded one end portion of a garment, means 
rotatably supporting said means in a position in 
which air discharged from said conductor will 
enter said expanded portion of the garment, 
means independent of said supporting means for 
revolubly supporting the other end of said gar-
ment with its axis aligned with the axis of said 
first named supporting means, and means for 
forcing steam laterally outwardly through the 
fabric of the supported garment.

6. In an apparatus of the kind described, an 
air conductor, means for discharging air from 
said conductor upwardly in a direction inclined 
to the vertical, means for supporting a garment 
rotatably on and adjacent to the discharge end 
of said conductor with its axis lengthwise of 
the garment and in the path of and parallel with 
the current of air discharged from said conductor 
into said garment, and means including a nozzle 
being manually movable against the inner side 
of the garment and insertable into said garment 
so supported, said nozzle having an outlet adapted 
to discharge steam forcibly outwardly through 
the fabric of the supported garment.

7. In an apparatus of the kind described, an 
air conductor having a member across its dis-
charge end, a member having means for engag-
ing and holding expanded one open end of a 
garment, and a hook member having means for 
releasable holding engagement with said first 
named member and having swivelled engagement 
with said garment expanding member.

8. In an apparatus of the kind described, an 
air conductor having two crossed members across 
its discharge end, a member having means for 
engaging and holding expanded one open end of 
the garment, and a hook member having means 
for releasable holding engagement with said 
crossed members at the intersection of the latter 
and having swivelled engagement with said gar-
ment expanding member.

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20