

April 21, 1925.

1,534,818

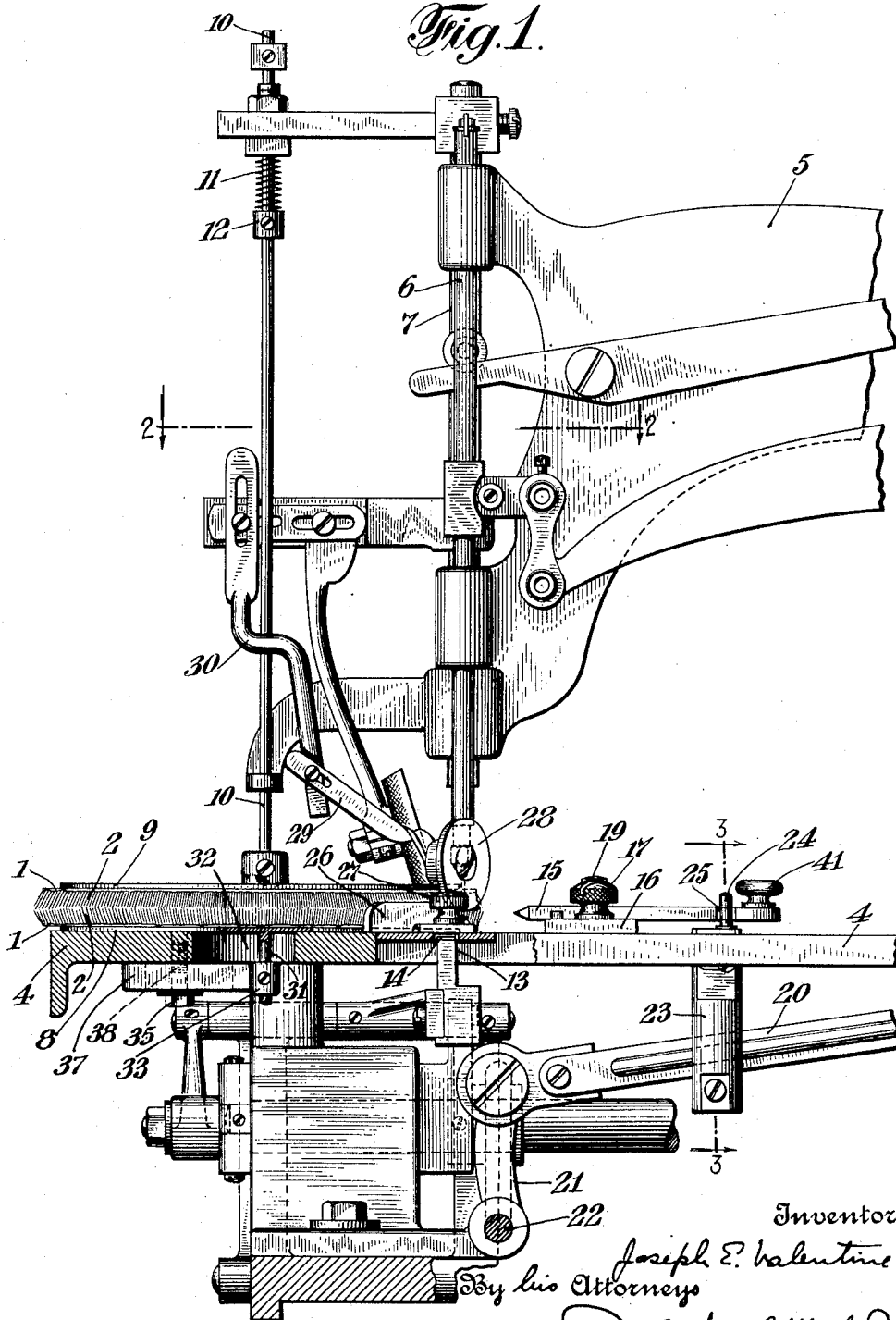
J. E. VALENTINE

SEWING MACHINE

Filed Aug. 14, 1923

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Fig. 1.



Inventor

Joseph E. Valentine

By his Attorneys

Trindle, Wright, Neal & Bean

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J. E. VALENTINE

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Fig. 2.

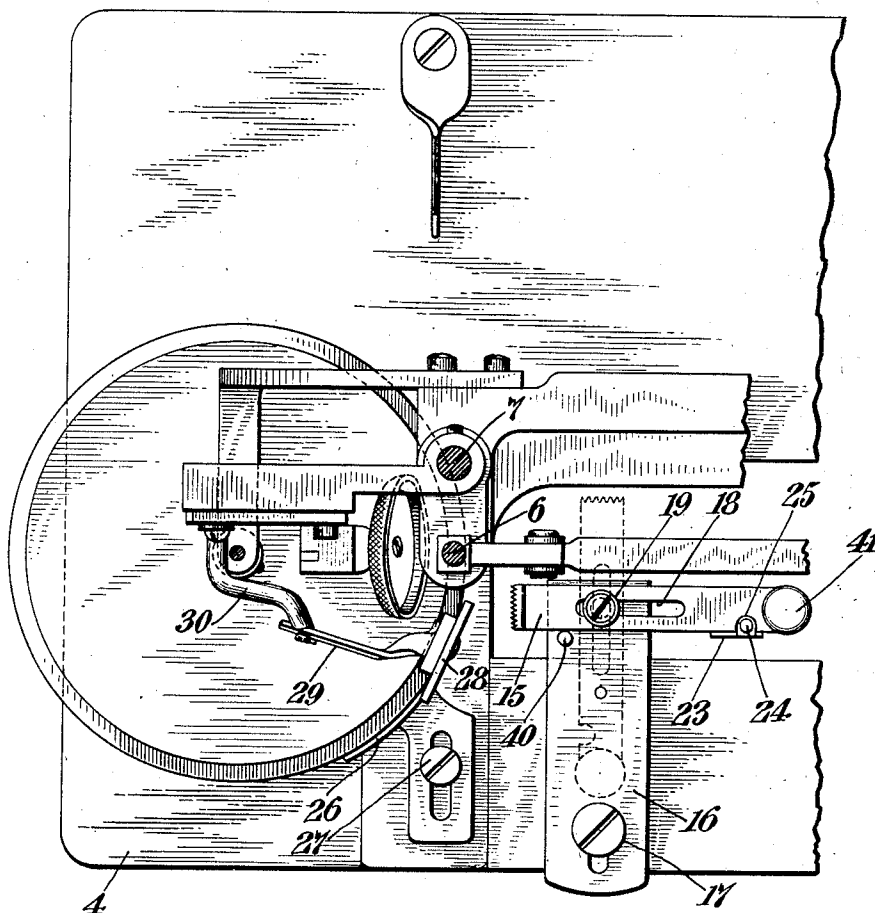


Fig. 3.

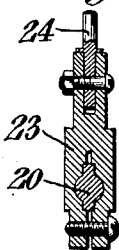


Fig. 4.

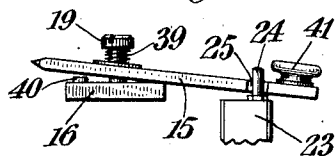


Fig. 3a



Inventor

Joseph E. Valentine
By his Attorneys
Pinal, Wright Neale & Dean

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Fig. 5.

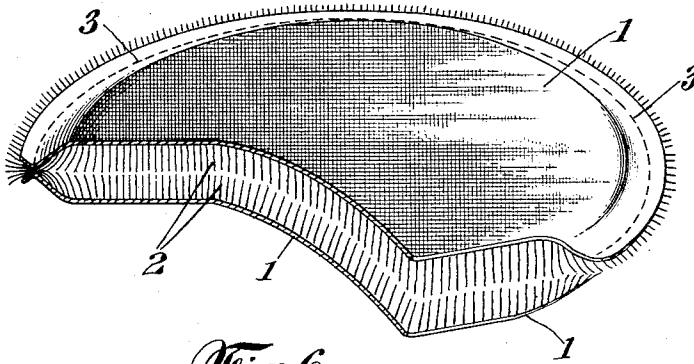


Fig. 6.

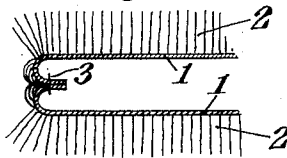


Fig. 7.

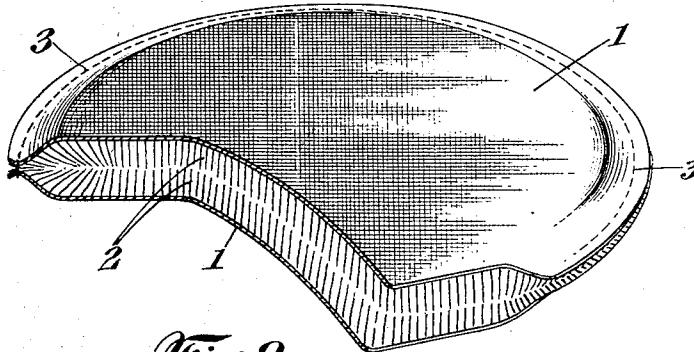
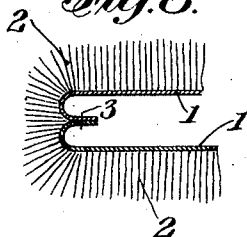


Fig. 8.



Inventor
Joseph E. Valentine
By his Attorneys
Prindle, Knight, Neal & Bean

UNITED STATES PATENT OFFICE.

JOSEPH E. VALENTINE, OF WHITESTONE, NEW YORK, ASSIGNOR TO VALMONT MANUFACTURING CO., INC., A CORPORATION OF NEW YORK.

SEWING MACHINE.

Application filed August 14, 1923. Serial No. 657,292.

To all whom it may concern:

Be it known that I, JOSEPH E. VALENTINE, a citizen of the United States, a resident of Whitestone, in the county of Queens and State of New York, have invented certain new and useful Improvements in Sewing Machines, of which the following is a specification.

The invention relates to a sewing machine adapted to operate upon piled material, such as the fuzzy fabrics employed in making up powder puffs, and has for its primary object, to provide a machine by which material of the above nature may be sewn without substantial disarrangement of the pile adjacent the seam.

Further objects and advantages of the invention will be in part obvious and in part specifically pointed out in the description hereinafter contained which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof. Such embodiment however is to be considered merely as illustrative of its principles.

In the drawings—

Figure 1 is a side elevation partially in section of certain portions of a sewing machine constructed in accordance with my invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a detailed section on line 3—3 of Figure 1 looking in the direction of the arrows.

Figure 3^a is a perspective view of a stationary pile displacing member.

Figure 4 is a fragmentary side elevation illustrating the adjustment of the pile displacing member hereinafter described.

Figures 5 to 8 are sectional views illustrating powder puffs, to make clear the objects which the invention is intended to accomplish.

The illustrated machine is disclosed as applied to the stitching together of piled fabric disks as a step in the manufacture of powder puffs, the disks usually having a canvas backing with a woolen pile. In making articles of the above nature, the disks above mentioned may be superposed one over the other with their piled surfaces face

to face, as shown in Figures 5 and 7, and a line of stitching formed partly around the periphery of the disks to secure the same together, after which they are turned inside out and the stitching completed by hand or in any other suitable manner. It is to be understood, however, that the manufacture of powder puffs is but one example of the uses for which the invention may be employed.

If pieces of piled material to be used for powder puffs or similar purposes are stitched by means of a sewing machine of ordinary character, the pile near the seam tends to catch to some extent in the stitches and, furthermore, the pressure applied to material during the sewing operation tends to force the pile out of natural position toward the edges of the pieces being stitched; the result is that when the powder puff is turned inside out, a certain amount of the pile will be caught by the stitches or directed toward the inside of the same, thus resulting in a defective product.

Figure 5, for example, shows a pair of fabric disks 1 each having a pile 2 thereon. When a seam 3 is stitched around the peripheral edges of the disks 1, the pile adjacent the seam will be caught in the stitches or directed toward the edges of the pieces with the result that when the puff is turned inside out, as indicated in Figure 6, the pile is likely to be quite defective along the seam at the side of the puff.

I have found that it is possible to substantially avoid the above difficulties by employing in connection with the stitching mechanism of the sewing machine, a member which acts between the piled surfaces of the pieces being stitched to displace the pile of the material adjacent the seam being stitched, toward the side of the seam which is to be exposed; for example, in making powder puffs the effect of the pile displacing member above described is to position the pile elements in such a way that they are directed inwardly toward the central portion of the disks as shown in Figure 7; thus the line of stitching 3 does not catch the pile in such a way as to provide bare spots when the disks are turned inside out, but the density of the pile is in effect increased at

the seam, as shown in Figure 8, with the result that the sides of the completed puff are piled to as great, if not a greater, extent than the faces thereof.

5 The invention is illustrated as applied to a sewing machine, the general structure of which is known. The machine is shown as having a table 4 and yoke 5 which latter slidably guides a needle bar 6 and the
10 presser bar 7. Preferably the machine also is provided with means for automatically feeding the piece to be stitched to the stitching mechanism; in the present instance the table 4 rotatably supports a circular plate
15 8 upon which the pieces to be stitched are placed and toward which such pieces are resiliently pressed by means of a similarly shaped top plate 9 connected to a spindle 10 which is rotatably and slidably supported in
20 the yoke 5 or parts attached thereto. The top plate 9 is normally urged to hold the pieces in frictional engagement with plate 8 as by means of a spring 11 acting against a collar 12 on the upper portion of spindle
25 10. Thus the spindle 10 may be lifted up between sewing operations and when released it will serve to hold the pieces being stitched in proper relation to plate 8. The latter plate may be intermittently stepped
30 around to feed the pieces past the stitching mechanism, for example, by means of a feed dog 13 (Figure 1) adapted to engage the bottom of the flat plate 8 at the proper times through a hole 14 in the table
35 of the machine. However, as the detailed construction of the stitching mechanism, looper, &c., is not essential to the present invention such parts will not be described at length.

40 In accordance with the present invention the piled material, just before it reaches the stitching mechanism, is subjected to the action of a pile displacing member 15 which penetrates in between the pieces being
45 stitched in such a way as to position the pile elements at the edges of the piece in the manner illustrated in Figure 7, that is to say, to displace the pile toward the side of the seam which is to be exposed. Preferably the end of the member 15 is bluntly
50 wedge-shaped to permit the latter to enter between the piled material and withdraw therefrom without disarranging the pile during the return stroke.

55 The pile displacing member 15 may be operated from any convenient part of the sewing machine; in the present embodiment such member slides back and forth over the plate 16 suitably attached to the table 4, as by the screw 17, the member 15 being provided with a slot 18 within which is received
60 a stud 19 affixed to plate 16.

65 The illustrated type of sewing machine includes as a part of its general structure, a looper connecting rod 20 (Figure 1) which

is pivoted at its forward end to a link 21 which turns a spindle 22 operating the looper in well known manner which need not be described in detail herein. The looper connecting rod 20 may be conveniently
70 utilized to drive pile displacing member 15; in the present instance a clamp 23 (shown in detail in Figure 3) is joined at its lower end to connecting rod 20 and provided at its upper end with a pin 24 which engages
75 in a slot 25 in the pile displacing member 15; thus the member 15 is reciprocated in accordance with the back and forth movements of the looper connecting rod 20.

I prefer to advance the member 15 to
80 penetrate between the piled material in such timed relation to the feed of the latter that the piled material is stationary when the member 15 penetrates into the same. In the illustrated type of machine this result is ac-
85 complished by driving the pile displacing member from connecting rod 20 since the latter moves forward or toward the left of Figure 1 during a period in the cycle of
90 the machine in which the feed dog 14 is not operating to move plate 8; thus the pile displacing member 15 will not tend to push the pieces being stitched out of proper position to the extent which would happen if the
95 member 15 were advanced at a time when the pieces were being fed past the needle.

I prefer also to employ in connection with the pile displacing member 15 a guide member which serves to shape up the pile elements before they reach the path of movement of
100 member 15; in the illustrated embodiment an arcuate guide 26 is mounted on table 4 as by a screw 27, in position to bear against the periphery of the lower fabric disk being stitched and thus serves to hold in position
105 the backing and pile elements, which latter tend to project outwardly between the fabric disks. A pressure member such as the guide roller 28 may also be employed to engage the edge of the upper fabric disk to
110 press the latter down into such position that the pile displacing member may act properly between the disks, such roller in the present instance being carried by an arm 29 adjustably supported by a bracket 30.

115 It will be noted that parts, such as the pile displacing member 15, guide 26 and roller 28, may be adjusted in position according to the size of disks being operated upon by a manipulation of the screws associated respectively therewith and the plate
120 8 may be likewise adjusted due to the fact that its stud 31 (Figure 1) passes through a slot 32 in table 4, and is journaled in a hub 33 which latter may be moved toward
125 or from the stitching mechanism, as may be necessary, by adjustment of a bolt 35 with regard to which the hub 33 may be slid back and forth when the bolt is loosened up; as
130 shown arm 37 attached to the hub 33 is pro-

vided with a slot 38 in which bolt 35 engages.

I also prefer to construct the pile displacing member 15 in such a manner that it may be easily moved out of operative position when desired. In the present instance such member is resiliently pressed toward the plate 16 by a spring 39 (Figure 4) under screw 19 and a stop 40 on plate 16 normally prevents the pile displacing member from being turned in anti-clockwise direction (as such member appears in Figure 2); the pin 24 normally prevents the pile displacing member from being turned in a clockwise direction but if the knob 41 on the pile displacing member be depressed, as indicated in Figure 4, the forward end of the pile displacing member will be lifted above stop 40 and the pile displacing member may then be turned in an anti-clockwise direction to overlie stop 40; knob 41 may then be raised to lift the pile displacing member out of engagement with pin 24 after which the member may be turned to the position indicated in dotted lines in Figure 2.

In Figure 3^a I have illustrated a stationary pile displacing member 42 which may be clamped to the table 4 in such position as to project between the fabric disks and force the pile thereof inwardly as above described; in the present instance the member 42 is provided with a tapering finger 43 disposed at a like angle to the line of movement of the pile elements past the finger, whereby the latter acts to cam the pile elements inwardly. However, I prefer to employ the reciprocating pile displacing member illustrated in Figures 1 to 3 with the types of machines which employ a frictional feed, since this type of pile displacing member does not impose as much resistance to the feed, as does the stationary member disclosed in Figure 3^a.

While a specific embodiment of the invention has been disclosed it will be obvious that many changes may be made therein

without departing from its principles as defined in the appended claims.

I claim:

1. A sewing machine having a table thereon, mechanism for stitching together adjacent pieces of piled fabric, a looper actuating member, a pile displacing member movably mounted adjacent said stitching mechanism and means for connecting said pile displacing member to said actuating member to drive the pile displacing member therefrom.

2. A combination as set forth in claim 1 wherein said looper actuating member comprises a looper connecting rod extending under said table.

3. A sewing machine comprising mechanism for stitching together adjacent pieces of piled material and means adjacent said stitching mechanism and acting between said pieces for displacing the pile thereof toward one side of the line of stitching together with means acting in advance of said displacing means for pressing the edges of the pieces toward each other, such pressing means including a roller provided to engage the edges of the pieces.

4. The combination set forth in claim 1 wherein said pile displacing member is slidably mounted upon a plate on the table of the machine together with a clamp fixed to said looper actuating member and engaging said pile displacing member.

5. The combination set forth in claim 1 wherein said pile displacing member is slidably mounted upon a plate on the table of the machine together with a clamp fixed to said looper actuating member and engaging said pile displacing member, said pile displacing member being adjustably supported to permit the same to be moved out of engagement with said clamp.

In testimony that I claim the foregoing, I have hereunto set my hand this 2 day of Aug., 1923.

JOSEPH E. VALENTINE.