Sept. 11, 1956 S. S. L. BERNARD 2,762,323

DEVICE FOR ASSEMBLING FABRICS OF SYNTHETIC MATERIAL SUCH AS SUPERPOLYAMIDE

Filed Oct. 20, 1952

Fig. 1.

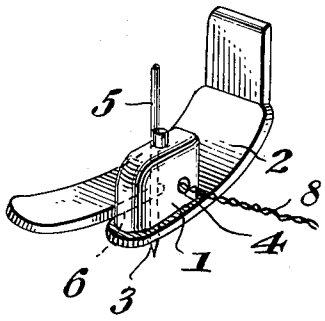


Fig. 2.

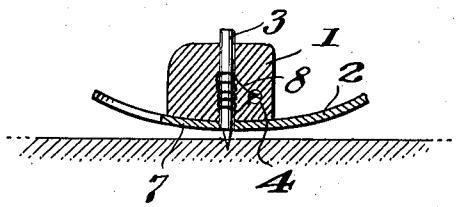


Fig. 3.

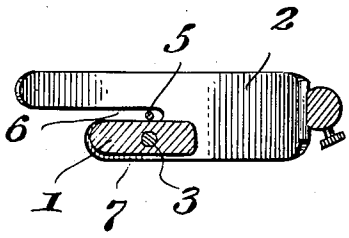
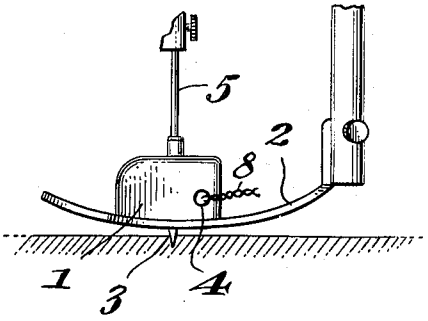


Fig. 4.



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DEVICE FOR ASSEMBLING FABRICS OF SYNTHETIC MATERIAL SUCH AS SUPERPOLYAMIDE

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Claims priority, application France October 23, 1951
3 Claims. (Cl. 112—123)

It is known that seams made on certain synthetic fabric material such as superpolyamide have the disadvantage of causing the weave to slip where the seam occurs.

The present invention is more particularly intended to overcome this disadvantage.

To this end it relates to a process for assembling pieces of synthetic fabric material, characterized in that the edges of the fabric are soldered at the same time that they are sewn, which prevents the weave unraveling where the seams occur.

According to one form of embodiment of this process, the edges of the fabric are simultaneously soldered and cut at the same time that they are sewn.

The invention relates to this process no matter what device is used for its achievement. Nevertheless, the invention also relates to a device enabling the foregoing process or similar processes to be very simply and efficiently operated, and characterized in that the part such as the presser foot, guiding the needle of the sewing machine, and pressing on the fabric which is to be assembled, comprises a heated point, blade or wire, to ensure soldering, and contingently the simultaneous soldering and cutting of the edges of the synthetic fabric material.

The invention also relates to the characteristics hereinafter described and to their various possible combinations.

A device in accordance with the invention is illustrated by way of example in the accompanying drawings, in which:

Figure 1 shows an elevation view of the device for sewing the seams of synthetic fabric material.

Figures 2 and 3 respectively show a side and plane view, seen from above, of the device of Figure 1.

Figure 4 is a section elevation view of the appliance.

According to the process of the invention, the cut edges of the synthetic fabric material such as superpolyamide are burnt and soldered at the same time as they are sewn, so as to ensure the assembling of the pieces under consideration, such as ready-made garments.

Furthermore, this soldering can be accompanied by the cutting of the edges of the fabric.

Figure 1 gives a perspective view of an appliance for operating the process and simultaneously effecting the seaming and soldering of the cut edges of the synthetic fabric material.

This device, which is intended to be connected to a sewing machine, is mounted upon the presser foot **2** of the machine. This foot is traversed in its slot **6** by the needle **5** of the sewing machine. On the small arm **7** of the fork which forms the base of the presser foot, a point, blade or wire surrounded by a heating resistance protected by a casing **1** and fed by the electric conductors **8**, is placed. These electric conductors **8** terminate at a plug **4** fitted on the side of the casing **1**.

The device described above operates in the following manner:

The point **3** is heated by the electric current conveyed by the wires **8** and passing through the heating resistance surrounding said point **3**. The seam is made by the needle **5** of the machine in the usual manner. On this seaming action there is superimposed a soldering action obtained by the heated point **3** which is in contact with the fabric to be assembled, when the presser foot **2** is lowered. This heated point **3** cuts the sewn fabrics at a short distance from the seam while soldering and equalizing the edges. The seam thus remains perfectly regular and parallel to the cut and soldered edges.

To prevent ignition taking place, and, in accordance with the invention, the heating of the point can be effected so as to synchronize with the lowering of the presser foot **2** or starting up the motor of the machine.

Under these conditions, it is only necessary to provide a contact controlled by switching on the motor and at the same time that the presser foot **2** moves, this contact closing the feed circuit of the heating resistance of the point **3**.

Obviously, numerous modifications can be applied to the device described above, without going outside the scope of the invention for that purpose.

By way of example, the following arrangements can be adopted:

The electric resistance which ensures the heating of the point **3** can be independent.

The heating point **3** can be fixed, pivoting or interchangeable.

The arrangement of this point can be fitted to a part other than the presser foot of the sewing machine and be adapted to any machine of this kind, to which it is only necessary to add to the device which makes the seam, a point **3** heated by an electric resistance.

The appliance described above can be used for the hot cutting or burning of the edges of the fabric, the needle of the machine, in this case, being put out of action.

What I claim is:

1. In an apparatus for fixing together pieces of thermoplastic cloth material, a sewing machine having a presser foot adapted to rest upon pieces of cloth to be fixed together, a needle cooperating with said presser foot, a pin member mounted on said presser foot having a pointed end extending below said foot and insulated therefrom, a separate heating electrical resistance connected to said pin and in thermic contact therewith to heat said pin and means in operative relationship with said resistance to provide an electrical source of energy whereby said resistance and said pin are heated for cutting off and soldering said pieces of cloth material.

2. In an apparatus as set forth in claim 1 wherein said electrical resistance is coiled about said pin.

3. In an apparatus for fixing together pieces of thermoplastic cloth material, a sewing machine having a presser foot adapted to rest upon the pieces of cloth to be fixed together, said presser foot comprising a fork having two branches, one of said branches being shorter than the other, a needle cooperating with said presser foot and extending between said branches, a pin member mounted on the short branch of said presser foot extending below said foot and insulated therefrom, a separate heating electrical resistance connected to said pin and in thermic contact therewith to heat said pin, conductors connecting said electrical resistance to a source of current whereby the resistance and said pin are heated for cutting off and soldering said pieces of cloth and a casing surrounding said conductors.

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