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METHOD OF APPARATUS FOR CUTTING FABRICS OR SIMILAR MATERIALS

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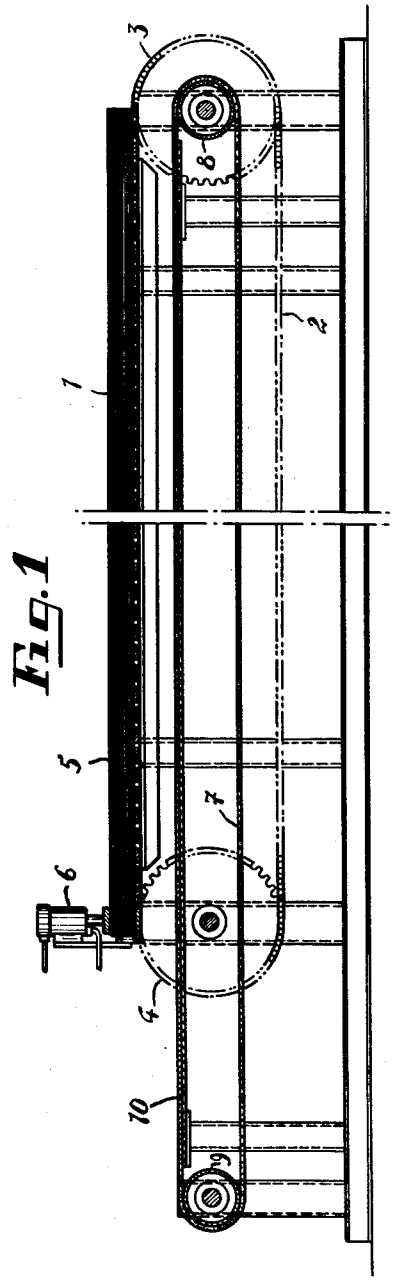



Fig. 1

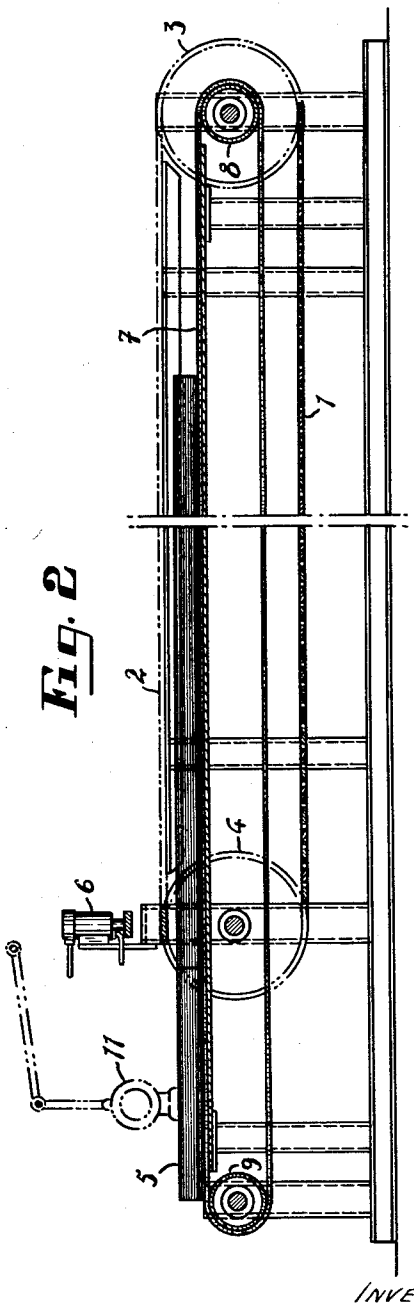



Fig. 2

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# METHOD OF AND APPARATUS FOR CUTTING FABRICS OR SIMILAR MATERIALS

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For cutting fabrics for various kinds of garments in large quantities it is customary to place a plurality of pieces of fabric upon each other such as to form a pile of fabric which is marked with the desired pattern whereupon the entire pile of fabric is cut along the lines of the pattern. In order to make the maximum possible use of the pieces of fabric, these pieces should be so large that the desired patterns can be placed in the most suitable manner such that the remaining scraps will not amount to a considerable part of the total area of the fabric. For this reason, long laying-out tables having, for instance, a length of 100 feet and a width of 5 feet are used to place thereon correspondingly large piles of fabric. If the pile of fabric is cut on this table, the table is taken up until all of the patterns have been cut out, and a new pile of fabric can not be placed on the table before the entire operation has been finished. Alternatively, the large pieces of fabric may be severed into smaller pieces which then are conveyed, for instance on carriages, to separate cutting devices, such as band-cutters. In this case a new pile of fabric can be placed on the table as soon as the previous pile has been carried away. However, there arise inconveniences during the transportation of the piles in so far as the layers of the piles are likely to be displaced relative each other, and, further, this method results in a certain waste of time.

This invention relates to a method and an apparatus having for its object to eliminate the above named inconveniences due to the fact that as soon as a pile of fabric has been marked on the table, the table is instantly accessible to the next pile of fabric, while the cutting-out operation is performed in close proximity to the table such that there is no need of conveying the pile from the laying-out place to the cutting-place. The method according to the invention comprises the steps of laying out a plurality of pieces of fabric in a pile on a withdrawable support, marking the top layer of the pile, holding fast one end of the pile by means of a clamping device, withdrawing the support to have the pile of fabric progressively fall down onto an underlying conveyer, releasing the held-fast end, feeding the pile on the conveyer successively to a cutting-out table, cutting out the patterns, and simultaneously returning the withdrawable support to its initial position and placing a new pile of fabric thereon.

An apparatus devised in accordance with the invention is described hereinbelow with reference to the drawing in which FIGS. 1 and 2 illustrate side elevations of a laying-out table in positions for two different steps of operation.

Referring to FIG. 1, a pile of fabric 5 is laid out on a movable horizontal support 1 which may be constituted by a plurality of ribs or bars fastened transversely at their ends between a pair of parallel chains 2. Each chain 2 runs over two sprocket wheels 3 and 4, the support 1 extending over only a part of the length of the chains 2. After the entire pile has been placed on the table formed by support 1, one end of the pile is held in a fixed position by means of a clamping device 6. When the top layer of the pile has been marked in the usual manner, the support 1 is moved to the right into the position shown in FIG. 2, preferably by means of a mechanical driving source. As the bars of the support 1 are thus progressively moved out from underneath the pile of fabric, it will successively fall down onto a conveyer 7, beginning with the fabric adjacent the clamped end of the pile. The conveyer 7 is disposed in parallel relation to and below the support 1, running around wheels 8, 9 and suitably driven by means not shown. The end of the pile held by the clamping device 6 is released after the support 1 has been withdrawn to such an extent that the entire remaining part of the pile 5 has been placed onto the conveyer 7, whereupon the conveyer is driven to the left into the position of FIG. 2. The conveyer is longer than the support 1 and constitutes at one end a free table 10 provided with a cutting device 11 of conventional type forming no part of the invention. The pile of fabric laying on the conveyer 7 is successively fed to the table 10 where the marked patterns are cut out to be carried away for further work. Meanwhile, the support 1 is moved in the opposite direction from its initial movement until it resumes its initial position, and a new pile of fabric 5 is placed thereon and clamped by the device 6. As soon as the pile of fabric lying on the conveyer 7 has been dealt with, the next pile of fabric can be placed on the conveyer, and the operation can be repeated.

The main result of the invention is the saving of time and space, since a pile of fabric can be placed on the support at the same time as a previous pile can be worked upon within the same work-room and since no additional time is required for transporting the piles from the laying-out place to the cutting-place. Further, there is no risk of mutual displacements of the layers of fabric during the movement from the laying-out place to the cutting-place.

What we claim is:

1. An apparatus for feeding a pile of fabric and similar flexible material to a cutting-out table, comprising a movable horizontal support for said pile of fabric, moving means for moving said support away from under said pile, a clamping means at one end of the support for holding fast the pile of fabric both while it is being marked by a pattern and during the movement of said support, and an endless conveyor arranged underneath said support and in parallel relation thereto to receive a pile of fabric successively falling down upon the movement of the support and the subsequent unclamping of said clamping means, said conveyor being longer than said support and constituting at one end said cutting-out table for cutting patterns from the pile of fabric.

2. An apparatus as claimed in claim 1, in which the support consists of a set of transverse bars arranged between a pair of chains running in an endless path over chain wheels, said set of bars extending over a part of said path of the chains.

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