Aug. 30, 1949. J. ADELMAN 2,480,207

BELT TURNING APPARATUS

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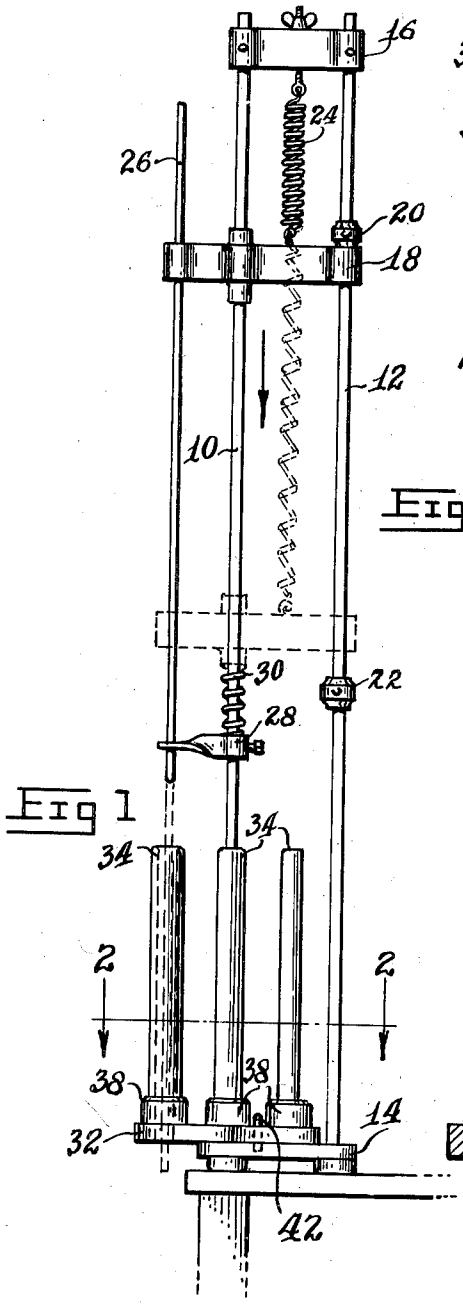


Fig 1

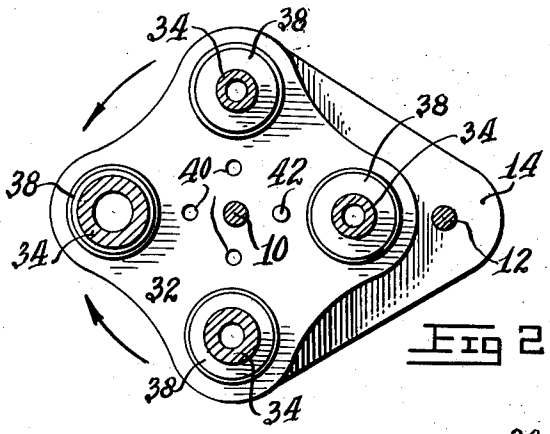


Fig 2

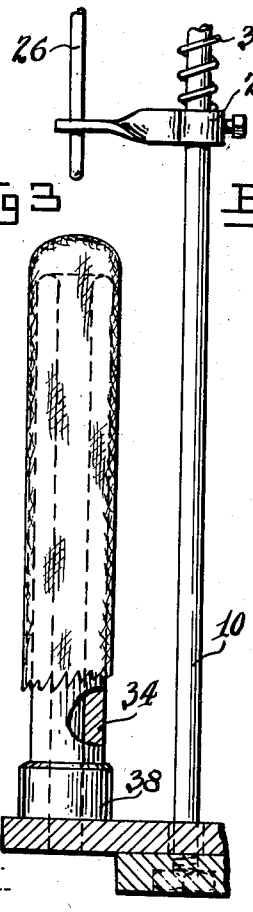


Fig 3

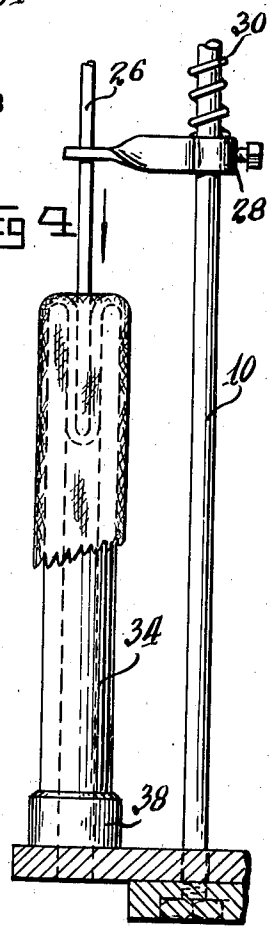


Fig 4

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BELT TURNING APPARATUS

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3 Claims. (Cl. 223—40)

1

Introduction

This invention relates to apparatus for the turning inside out of fabric tubes or bags, and more particularly to an apparatus for the turning of fabric belts or tabs of the tubular type as used in the manufacture of garments.

The turning of fabric belts or tabs of the tubular type after they have been cut and sewn, presents a considerable problem to the garment manufacturer, both in the cost of labour and the amount of time involved. When they are turned by hand, each tube has to be partially turned in and then pulled over a stick or form in order to reverse it, this operation necessarily consuming a great deal of time and thereby adding to the cost of the garment. The mechanical devices that are now available to perform this operation are mainly intricate and costly, and moreover, not sufficiently versatile to meet all the requirements of the clothing manufacturer using fabric belts and tabs in many sizes and types of materials.

The present invention deals fundamentally with these disadvantages and it aims to provide a thoroughly practical solution for them by providing a compact, portable, belt-turning apparatus adapted to turn fabric belts or tabs of practically any size or type of material as used by the garment trade.

Applicant's development

The invention is a tubular belt turning apparatus comprising a base, and at least one guideway extending from the base. An extension arm is slidably mounted on the guideway, and a plunger is attached to the extension arm. A guiding member attached to the guideway is adapted to guide the travel of the plunger. A turntable rotatably mounted on the base is adapted to carry a plurality of tubes of different diameters. Registering means are provided on the turntable and base, whereby any one of the tubes is adapted to be stopped in register with the plunger.

According to a preferred and more specific aspect of the invention the apparatus includes, a base, a pair of rods attached to the base and extending preferably vertically therefrom. An extension arm is slidably mounted on the rods and a plunger attached to the extension arm. A supporting arm attached to one of the rods is adapted to guide the end of said plunger and has an opening through which the plunger may slidably move. A spacing bar attached to the rods at a point above the extension arm holds these

2

rods apart substantially parallel to each other. Resilient means are attached between the spacing bar and the extension arm to retain the arm in the inoperative position and raise the arm to its original position when said arm is depressed manually. A pair of stop bushings adjustably mounted on the other of the rods limits the amount of travel of the extension arm. A table rotatably mounted on the base is adapted to carry a plurality of tubes. The tubes are of different diameters to hold fabric tubes of various sizes for turning, and are so mounted on the table that a direct passage is provided for through the inside of the tube and a corresponding opening in the rotary table. A stop pin mounted in the base is adapted to register with a plurality of holes in the rotary table in order to stop each selected tube in register with the plunger. Suitable attaching means are used for the attaching of the apparatus to a bench or table as required.

Detailed description

Having thus generally described the nature of the invention, particular reference will be made to the accompanying drawings illustrating a preferred embodiment thereof, and in which:

Figure 1 is a side elevation of a belt turning apparatus constructed according to the invention.

Figure 2 is top plan view partially in section of Figure 1 on line 2—2 further illustrating the constructing thereof.

Figure 3 is an enlarged fragmentary side elevation illustrating the method of employing the apparatus.

Figure 4 is an enlarged fragmentary side elevation illustrating the operation of the apparatus.

Referring particularly to Figure 1, a pair of rods 10 and 12, are secured to and extend vertically from a base 14 to a spacing bar 16 where they are secured substantially parallel to each other. An extension arm 18 is slidably mounted on the rods 10 and 12. The extent of the travel of the arm 18 is controlled by two adjustable stop bushings 20 and 22 mounted on the rod 12. A spring 24 is secured between the spacing bar 16 and the extension arm 18 and is adapted to retain the arm 18 in the inoperative position and to return the arm 18 to its original position on the arm 18 being depressed manually and released. A plunger 26 is secured to the extension arm 18, this plunger 26 being guided in its travel by a guide arm 28 mounted on the rod 10. A spring 30 is mounted on the rod 10 above the guide arm 28 and provides a resilient buffer for the downward stroke of the extension arm 18. A table 32

is rotatably mounted on the base 14 by the rod 10 passing through a centrally disposed opening in said table 32. A plurality of tubes 34 of different diameters are mounted on the rotary table 32 in annular bosses 38. The bosses 38 surround holes in the table 32 of approximately the same diameter as the inside diameter of the tubes. The rotary table 32 also having a plurality of holes 40 adapted to engage a pin 42 and stop in register any selected one of the tubes 34 with the plunger 26.

Operation

The apparatus is mounted preferably vertically on a suitable bench or table with the projecting portion of the table 32 extending over the edge, or an opening, of the table or bench so that a tubular belt or tab turned by the apparatus may be allowed to pass through the selected tube 34 and fall into a convenient box or receptacle.

On turning a fabric belt or tab the appropriate size of tube 34 is selected to accommodate the belt. The table 32 is raised slightly on the rod 10 and rotated till the required tube 34 is stopped in register with the plunger 26 by the stop pin 42. The belt is then pulled over the tube 34 (as shown in Figure 3) and the extension arm depressed manually, thus forcing the plunger 26 into contact with the belt and through the tube 34 (as shown in Figure 4).

It may be understood by the preceding explanation and accompanying drawings, that if a belt of a length exceeding that of the tube 34 and the stroke of the plunger 26 is to be turned, the extension arm 18 is depressed to the limit of its travel, thus pushing sufficient of the belt through the tube 34 so that it may be grasped and pulled downwards manually to complete its turning. In the case of large quantities of short belts or tabs of a length less than that of the tube 34, the extension arm may be depressed only as far as required to turn the belt, the belt thus remaining in the tube 34 till being pushed out by the successive turning of other belts.

As may be understood by the preceding description and drawings, the simple design of this apparatus, necessitating comparatively few working parts, lends itself to portability and compactness. The combination of the rotary table with the different diameter tubes also providing an advantage over other machines of this type in that substantially any size of tubular belt, or belts, made from practically any type of material as used by the garment trade, may be quickly and easily turned by this apparatus.

I claim:

1. A tubular belt turning apparatus including a base, a pair of rods attached to said base, an extension arm slidably mounted on said rods, a plunger attached to said extension arm, a guiding arm attached to one of said rods, said guiding arm having an opening adapted to allow said plunger to slidably move therein, a spacing bar connecting said rods, adapted to hold said rods in substantially equally spaced relationship to each other, resilient means attached between said extension arm and said spacing member, a pair of adjustable stop bushings mounted on the other of said rods, a turntable rotatably mounted on said base, a plurality of tubes mounted on said turntable, said tubes being of different diameters, registering means on said base and table adapted to stop said table so that the centre of the tubes and the plunger are in register, whereby said plunger on being depressed is adapted to engage a fabric tube placed on any of said tubes in register.

2. A belt turning apparatus including a base, a pair of elongated rods attached to and extending vertically from said base, an extension arm slidably mounted on said rods, said extension arm having one end projecting horizontally from said rods, a plunger attached to said projecting end of the extension arm, a guide arm having one end fixedly attached to one of said rods and the other end projecting horizontally therefrom, an opening in said projecting end of the guide arm adapted to allow said plunger to slidably move therein, a spacing bar attached to the top of said rods, a spring having one end attached to the spacing bar and the other end to the extension arm, a pair of stop bushings adjustably mounted on the second of said rods, a turntable rotatably mounted on said base, a plurality of tubes mounted on said table, said tubes being of different diameters, a plurality of holes in said table adapted to engage a stop pin mounted in said base, said holes being disposed in said base to provide for registering of said tubes with said plunger, whereby said plunger on being depressed is adapted to pass through any selected one of said tubes so stopped in register.

3. An apparatus, as claimed in claim 1, in which the turntable is rotatably mounted on the base by one of said elongated rods passing through a centrally disposed opening in said turntable.

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The following references are of record in the file of this patent:

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