March 8, 1966 A. I. GILBERT 3,239,211

MULTILAYER CLOTH LAYING MEANS

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FIG. 1.

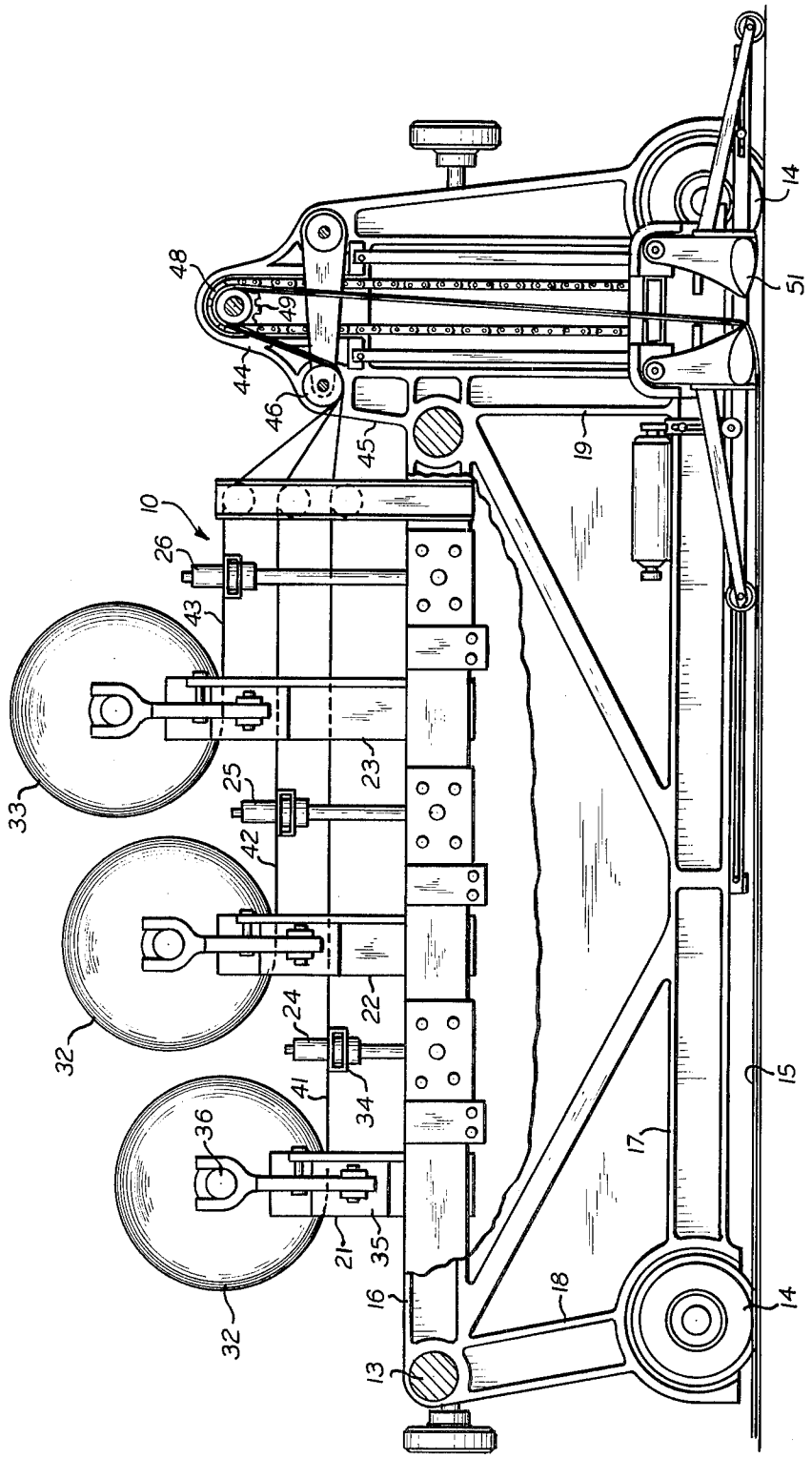

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FIG. 2.

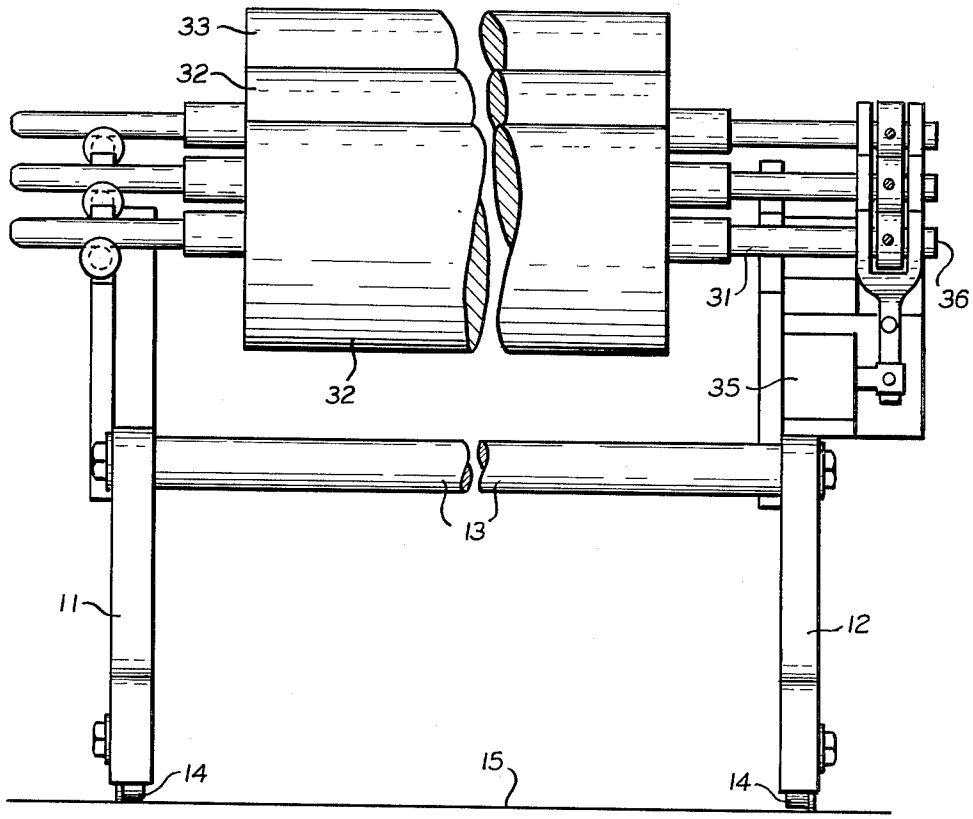
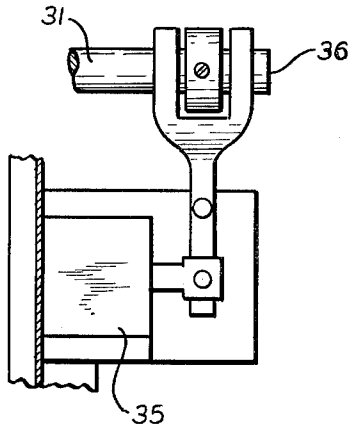


FIG. 3.



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3,239,211

MULTILAYER CLOTH LAYING MEANS

Abner I. Gilbert, New York, N.Y., assignor to Cutting Room Appliances Corporation, New York, N.Y.

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1 Claim. (Cl. 270—31)

This invention relates generally to the field of cloth laying machines, and more particularly to an improved form thereof and method of using the same which permits the laying of cloth at a much higher rate than has heretofore been possible in the prior art.

Cloth laying machines, generally, are well known in the art, and are employed to lay a plurality of cloth layers upon a table, prior to the placing of a pattern upon the uppermost layer and the cutting of a large number of parts of a garment which will subsequently be sewn together to form a completed garment. The laying of the cloth is normally accomplished by movement of a carriage over the surface of a table, while simultaneously dispensing a web of cloth to form "S"-shaped folds at either end of the table which are held in position by clamp means. A roll of cloth is supported on the carriage, and rotates as the carriage is reciprocated to dispense a web of cloth in a continuous manner. In some cases, where the opposite surfaces of the web are not identical, it is necessary to cut the web at the end of each traverse of the table, and rotate the carriage through 180 degrees, so that the same surface of the web is always uppermost. In such cases, the laying of a large number of layers requires even more time than when laid in the usual manner.

It is therefore among the principal objects of the present invention to provide an improved cloth laying carriage of the class described which will materially lessen the amount of time required to lay a given number of cloth layers upon a cutting table.

Another object of the invention lies in the provision of an improved cloth laying machine carriage having provision for simultaneously dispensing more than a single web of cloth, whereby a plurality of layers of cloth may be simultaneously laid with each pass of the carriage over the surface of the cloth laying table.

A further object of the invention lies in the provision of an improved cloth laying machine carriage of the class described having provision for simultaneously supporting for rotation about substantially parallel axes, a plurality of cloth rolls, and for placing the webs of cloth emanating therefrom in juxtaposed even relation prior to laying the same upon the surface of the table disposed therebeneath.

Yet another object of the invention lies in the provision of an improved edge control means, including a plurality of edge probes oriented for operation in a common vertical plane, whereby each of the supported cloth rolls may be individually axially shifted to maintain a longitudinal edge of the web emanating therefrom in said common vertical plane.

Still another object of the invention lies in the provision of an improved cloth laying machine carriage possessed of the above advantages, in which the cost of fabrication may be of a reasonably low order, with consequent wide sale, distribution and use.

A feature of the invention lies in the fact that the disclosed embodiment requires but very little additional mechanical complications as contrasted with prior art devices dispensing only a single web of cloth.

These objects and features, as well as other incidental ends and advantages, will more fully appear in the progress of the following disclosure, and be pointed out in the appended claim.

In the drawing, to which reference will be made in the specification, similar reference characters have been employed to designate corresponding parts throughout the several views.

FIGURE 1 is a schematic side elevational view, partly in section of an embodiment of the invention.

FIGURE 2 is a fragmentary end elevational view thereof as seen from the right hand portion of FIGURE 1.

FIGURE 3 is a fragmentary sectional view as seen from the plane 3—3 in FIGURE 1.

In accordance with the invention, the device, generally indicated by reference character **10**, is illustrated in the form of a cloth laying machine carriage of generally conventional configuration, and including first and second longitudinal frames **11** and **12**, respectively, interconnected by a plurality of transverse members **13**. Wheels **14** are provided at the four corners of the device **10** for the purpose of supporting the same for movement over the surface **15** of a cloth laying table. If desired, track means engageable with one pair of the wheels **14** (not shown) may be employed to assure that the device **10** travels over the surface **15** of the table in a straight line, as is well known in the art.

Each of the frames **11** and **12** includes an upper longitudinal member **16**, a lower longitudinal member **17**, and a plurality of vertical members **18** and **19** disposed at the ends thereof.

Extending upwardly from the upper longitudinal members **16** are first, second and third cloth roll supporting means **21**, **22** and **23**, respectively, each of the means **21–23**, inclusive, having associated therewith first, second and third edge alignment or monitoring means **24**, **25** and **26**, respectively. The monitoring means **24–26** may be of any suitable type, as for example that disclosed in the patent to Johnstone, No. 2,196,663, of April 9, 1940; the patent to Frisbie et al., No. 2,654,599, of October 6, 1953. Suitable circuitry for devices of this type is disclosed in the patent to Farber, No. 3,108,727, of October 29, 1963. Each of the means **24–26**, inclusive, is so positioned and aligned that when in operation each of the supporting means **21–23** is adjusted to maintain the edge of a web of cloth emanating therefrom in a common vertical plane.

The cloth roll supporting means **21–23**, inclusive, are generally similar, and are positioned in vertically staggered relation, as best seen in FIGURE 1. Each includes a vertical pair of stanchions **28–29**, the upper portions of which are adapted to support a spindle **31** upon which a roll of cloth **32** is supported for rotation. The monitoring means **24–26** are substantially identical, each including electric eye means **34**, and motor means **35** under the control of said electric eye means engaging an end **36** of the cloth roll spindle **31**.

Each of the cloth rolls **32** in unwinding provide a web of cloth, as at **41**, **42** and **43** which are dispensed in substantially parallel planes.

Mounted on stanchions **28** and **45** is an idler roller **46** over which each of the webs **41–43** is trained to form a single laminated web. In the case of most fabrics, there is sufficient nap causing the three webs to remain in relatively fixed position relative to each other after having passed the idler roller **46**, so that they may be laid as a unit upon the surface **15** of the cloth laying table. This may be accomplished in any well known manner, as by passing the now integrated webs over a driven roller **48** which rotates through sprocket means **49** with reciprocation of the device **10** over the surface of the cloth laying table. After passing over the driven roller **48**, a vertical continuous segment of the same is guided to fold forming means **51** of well known type which may be used without alteration or adjustment.

It will, of course, be understood by those skilled in the art, that where desired more than three rolls of cloth may be simultaneously laid, and if desired the carriage

10 may include well known turntable means for dispensing cloth which must be laid in one direction only.

I wish it to be understood that I do not consider the invention limited to the precise details of structure shown and set forth in this specification, for obvious modifications will occur to those skilled in the art to which the invention pertains.

I claim:

In a carriage means for laying a plurality of cloth webs upon a cloth laying table, including a frame element having wheeled means for guiding the same for rectilinear moving over said table and a plurality of cloth rolled supporting means arranged in juxtaposed parallel relation for supporting a plurality of cloth rolls for rotation about substantially parallel axes, said axes being perpendicular to the path of motion of said carriage, the improvement comprising: a plurality of cloth web edge aligning devices, one for each of said cloth rolled supporting means, for individually axially shifting said cloth rolls to maintain one edge of the web of cloth emanating therefrom in a common vertical plane, said

aligning devices each including motorized means, and electric eye sensing means controlling said motor means; and at least one guiding roller disposed in spaced relation with respect to the surface of said cloth laying table, and arranged for rotation about an axis parallel to that of said first mentioned axes, to contact the web of each of said cloth rolls, whereby upon passing about said last mentioned roller, said plurality of webs coming into mutual surface contact for simultaneous laying upon the surface of said table in edged aligned relation.

References Cited by the Examiner

UNITED STATES PATENTS

354,952	12/1886	Tower	270—31
431,321	7/1890	Bindeman	270—31
564,989	8/1896	Goldenberg	270—31
1,516,212	11/1924	Schneider	270—31
2,737,385	3/1956	Friis-Hansen	270—31
3,112,107	11/1963	Theodosiou	270—31

EUGENE R. CAPOZIO, *Primary Examiner.*