April 9, 1940. M. BRETH 2,196,823

CLOTH LAYING MACHINE

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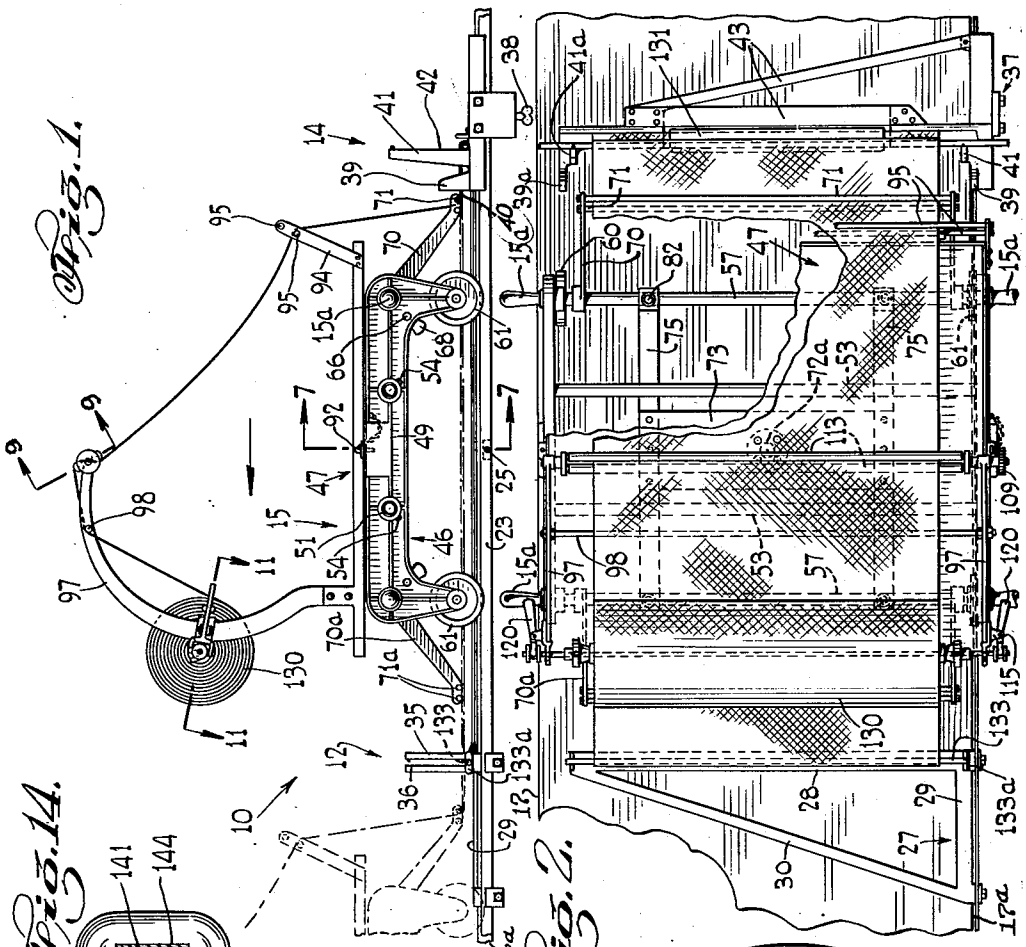


Fig. 1.

Fig. 2.

Fig. 14.

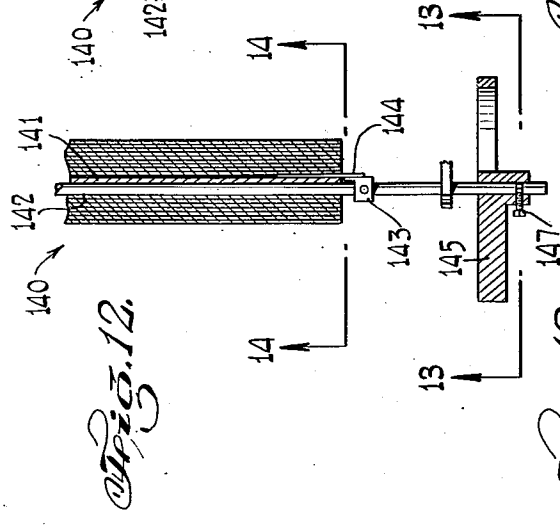


Fig. 12.

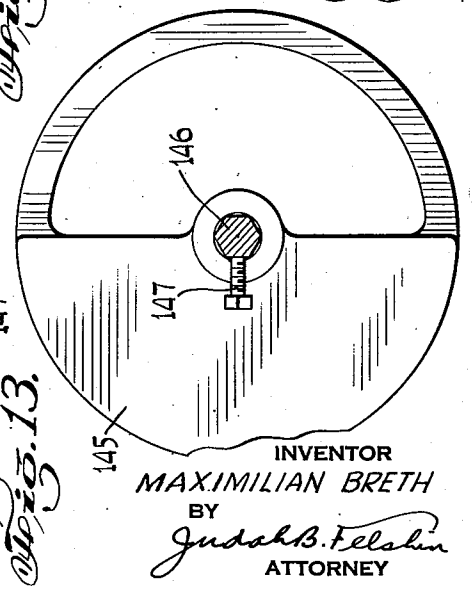


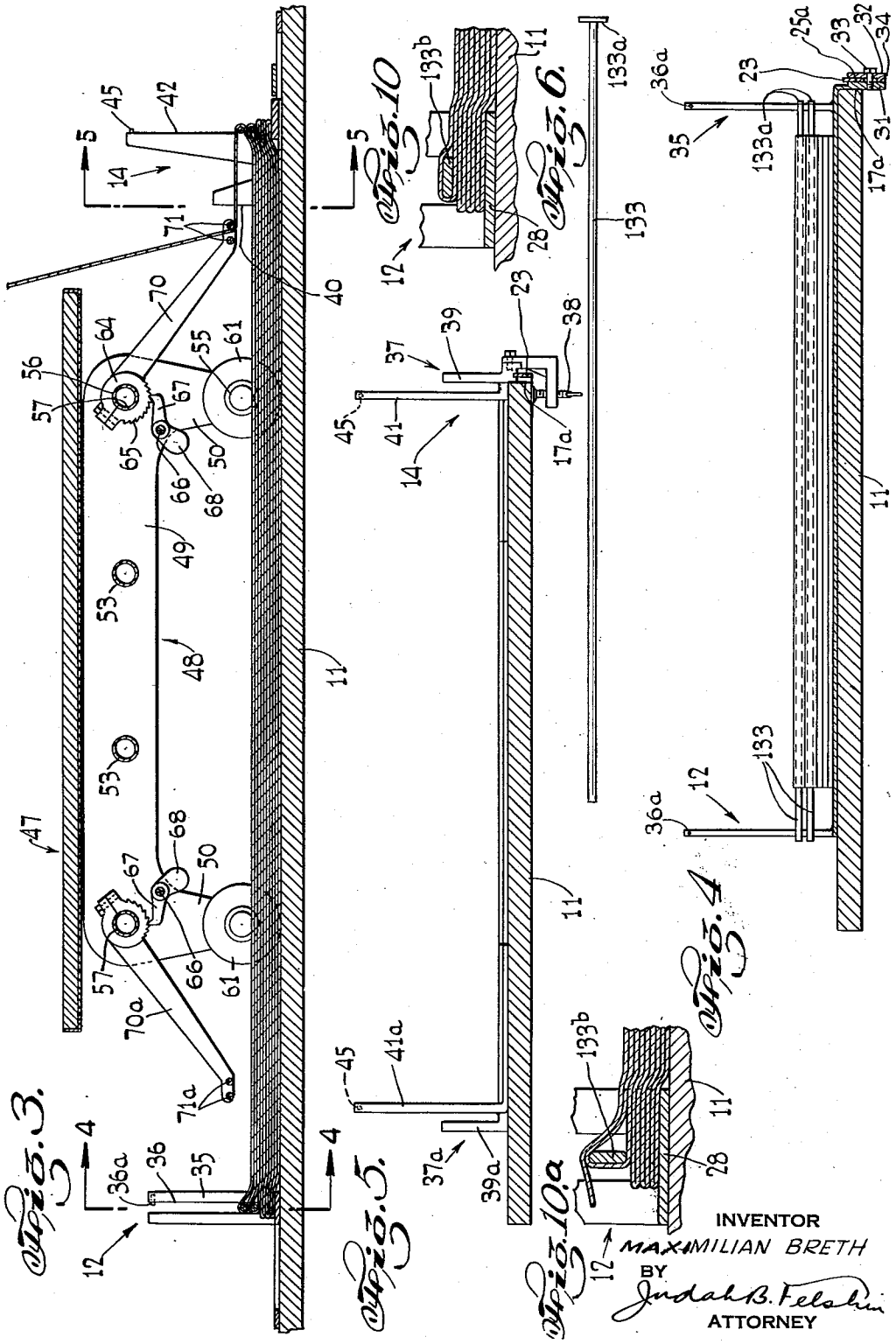
Fig. 13.

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CLOTH LAYING MACHINE

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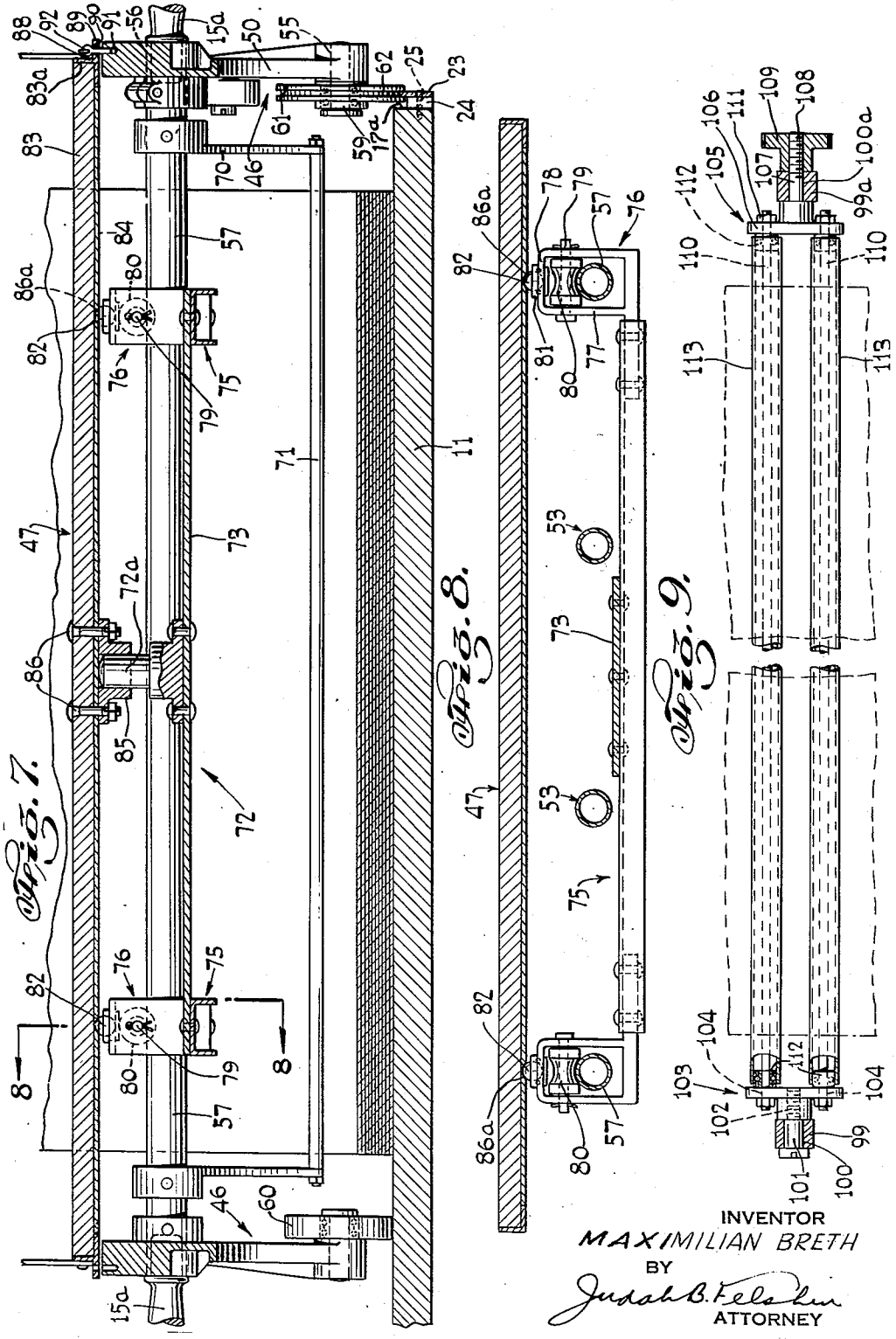


Fig. 7.

Fig. 8.

Fig. 9.

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CLOTH LAYING MACHINE

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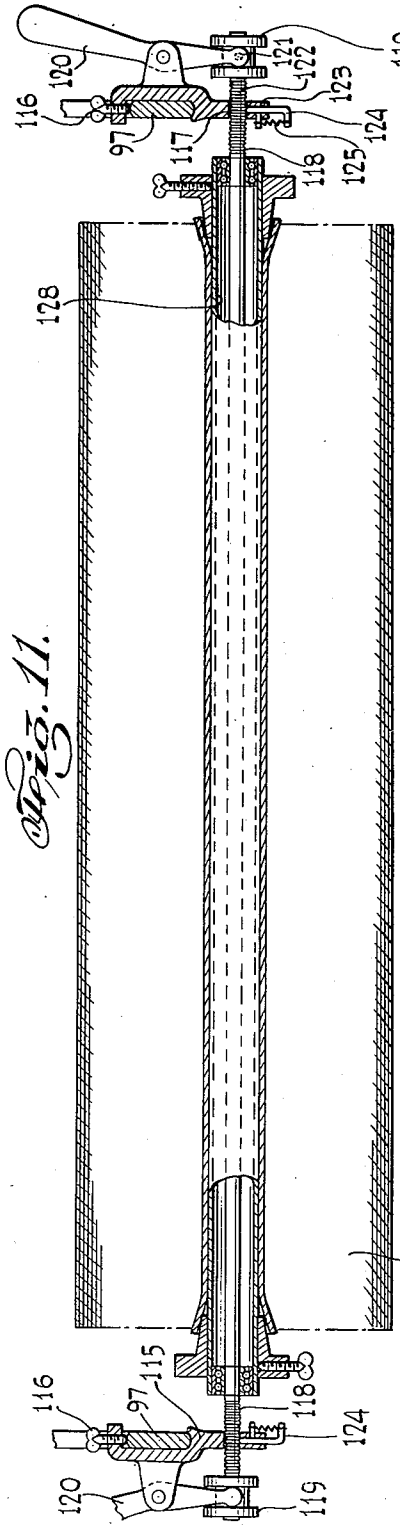


Fig. 11.

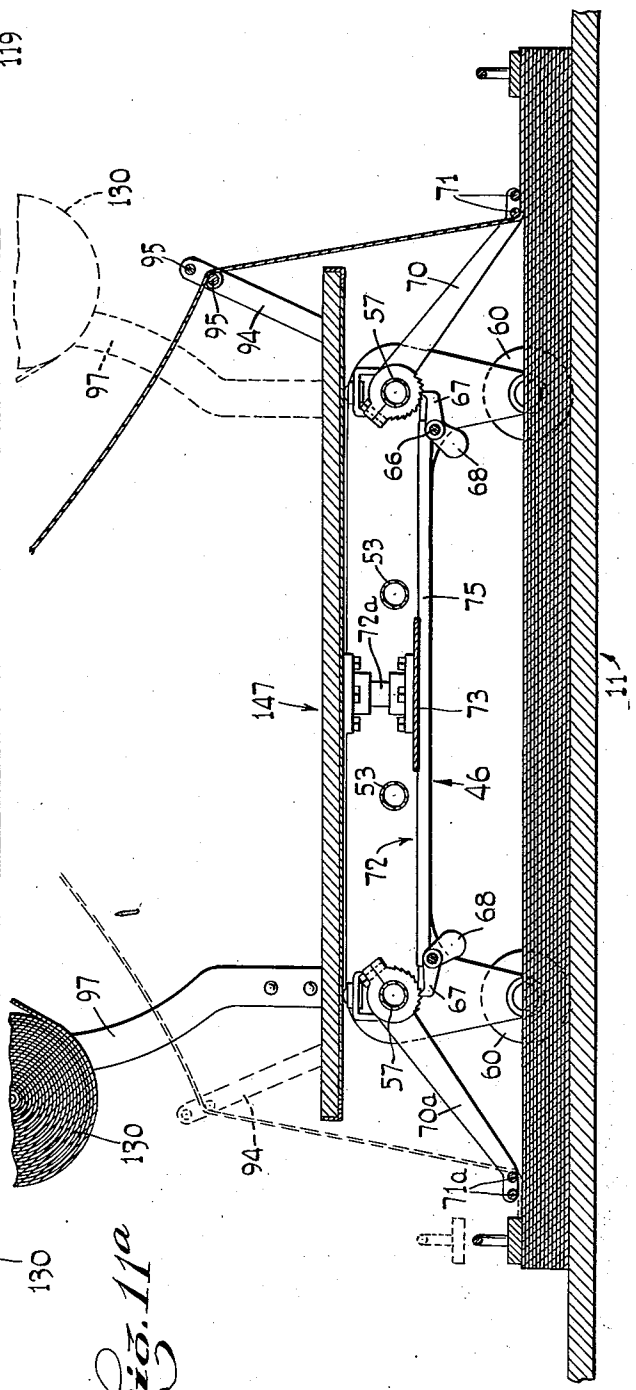


Fig. 11a

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CLOTH LAYING MACHINE

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Application September 11, 1937, Serial No. 163,374

22 Claims. (Cl. 270—31)

This invention relates to cloth laying machines. It is directed to a machine for laying predetermined lengths of cloth in layers on a cutting table.

An object of this invention is to provide a cloth laying machine of the character described with which cloth may be laid in layers, with adjacent layers having the right side up or down; or with alternate layers right side up or down.

A further object of this invention is to provide a cloth laying machine of the character described which will permit the cloth to be laid evenly, that is, with the layers substantially exactly superimposed and the edges registering.

Another object of this invention is to provide a machine of the character described provided with leader arms pivoted to a reciprocating car, the arms being provided with ratchet means to permit the arms to swing upwardly as the cloth piles up.

Yet another object of this invention is to provide in a cloth laying machine of the character described, a platform mounted on a car and adapted to reciprocate therewith on a table; to swivel about a vertical axis relative to the car; and also to slide on the car transversely of the table, said construction permitting the cloth to be laid either with alternate layers right side up, or with all the layers right side up or down, and permitting laying the cloth evenly with all the layers registering, provision being further made to lock the platform to said car to prevent relative movement between them.

Still another object of this invention is to provide in a cloth laying machine of the character described, a cloth carrier supported by roller bearings on a shaft which can move transversely of the platform to provide for exceptionally large take up, in addition to the take up permitted by moving the whole platform transversely of its supporting car.

A still further object of this invention is to provide in a cloth laying machine of the character described, stops defining the length of the cloth to be laid, the stops being adjustable longitudinally at both ends so that the cloth may be laid in various desired lengths and on various parts of the table.

Yet another object of this invention is to provide in a cloth laying machine of the character described, a shaft supported on the machine for axial shifting movement, but retained against rotation, and on which is mounted on ball bearings a tubular roller supporting a bolt or roll of cloth, whereby to facilitate unwinding of the cloth.

The cloth laying machine embodying the invention may be used for the laying of cloth either wound on a tubular roller or in book folded fashion, or rolled or wound on a flat board. When a bolt of cloth wound around a flat board is to be unwound, the same is mounted on a shaft provided with usual inwardly pointing V-shaped plates offset from the axis of the shaft and engaging the board. When so mounted the bolt becomes unbalanced with respect to the shaft and prevents the bolt from being unwound unevenly. It is therefore a further object of this invention to obviate this difficulty by mounting on the shaft carrying such a bolt of cloth, a counter balance which may be adjusted about the shaft to provide a perfect balance so that the cloth may be unwound smoothly and without jerky movements.

Still another object of this invention is to provide a neat and durable machine of the character described, which shall be easy to manipulate, relatively inexpensive to manufacture, simple to set up and adjust, and yet practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a side elevational view of a cloth laying machine embodying the invention;

Fig. 2 is a top plan view of the machine shown in Fig. 1;

Fig. 3 is an enlarged longitudinal cross-sectional view of the machine with a number of layers of cloth piled up with alternate layers right side up or down;

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 3;

Fig. 6 is a side view of one of the rods;

Fig. 7 is an enlarged, cross-sectional view taken on line 7—7 of Fig. 1;

Fig. 8 is a cross-sectional view taken on line 8—8 of Fig. 7;

Fig. 9 is an enlarged, cross-sectional view taken on line 9—9 of Fig. 1;

Fig. 10 is an elevational, cross-sectional view

illustrating a modified form of end rod over which the cloth is folded; and

Fig. 10*a* is a similar view showing the rod turned 90 degrees to facilitate withdrawal thereof.

Fig. 11 is a cross-sectional view taken on line 11—11 of Fig. 1;

Fig. 11*a* is a longitudinal, cross-sectional view of my improved machine illustrating the same when the layers are piled up with all the layers right side up or down.

Fig. 12 is a horizontal view in cross-section of supporting means for a bolt of cloth, and illustrating a counter balancing device therefor;

Fig. 13 is a cross-sectional view taken on line 13—13 of Fig. 12; and

Fig. 14 is a cross-sectional view taken on line 14—14 of Fig. 12.

Referring now in detail to the drawings, 10 designates a machine embodying the invention for laying cloth. The machine comprises generally of an elongated cutting table 11, a pair of spaced members 12 and 14 adjustably mounted thereon, and a car or carriage 15 on the table and adapted to roll back and forth to lay the cloth in layers between the stops.

The table 11 is flat and horizontal and elongated, and may be wood or of any other suitable material. The table has parallel side edges 17, 17*a* and may be of sufficient width to accommodate the usual bolts of cloth.

Attached to the edge 17*a* of the table and disposed parallel thereto, is an elongated strip 23 of metal, spaced from said edge by spacing blocks 24. Screws 25 extending through the strip 23 and spacing blocks 24 serve to fix said strip to the table in spaced relation to said edge. The upper edge of the spacing strip 23 extends above the spacing blocks 24, for the purpose hereinafter explained.

The member 12 comprises a flat triangular frame 27 lying flat on the table 11 and including a portion 28 perpendicular to the axis of the table and extending across the table, a portion 29 parallel to and adjacent edge 17*a* of the table, and an inclined portion 30 interconnecting portions 28 and 29. Extending downwardly from the portion 29 of the frame 27 and disposed within the slot 25*a* formed between the strip 23 and the edge 17*a* of the table, are spaced tabs 31 extending below the table. The member 12 may be moved longitudinally of the table, the tabs 31 serving as guides during such movement.

Said member 12 may be fixed to the table 11 by means of clamp plates 32 fixed to the tabs 31 by screws 33. The clamp plates 32 have offset lips 34 engaging the bottom ends of the tabs 31. The upper ends of the clamp plates 32 engage the outer surface of the strip 23. By loosening the screws 33, the member 12 may be moved in either direction on the table. Upon tightening the screws 33, member 12 is fixed to the table. Extending upwardly at both ends of the portion 28 of the frame 27, are parallel, aligned, slotted members 35, each formed with a vertical slot 36, for the purpose hereinafter appearing. Fixed to the upper ends of the members 35 and projecting into the slots 36 are small horizontal pins 36*a*. As will appear hereinafter, the member 12 serves to support rods about which the cloth is folded at one end.

As will appear hereinafter, member 14 serves as a stop for the carriage, and is adapted to support rods about which the cloth is folded at the other end. The same comprises a member 37 at the edge 17*a* of the table, and releasably clamped to said edge by a clamping screw 38. The member 37 has an upstanding arm 39 aligned with the strip 23 and provided with a vertical front edge 40. Said member 37 is also provided with an upstanding arm 41 of substantially the same height as the members 35 of the stop 12, and having a rear vertical edge 42. The arm 41 is disposed somewhat inwardly of the outer edge 17*a*, being offset from the arm 39.

Fixed to the member 37 by a pair of connecting members 43, is a member 37*a* disposed adjacent the outer edge 17 of the table 11 and having an upstanding arm 39*a* aligned with and similar to the arm 39; and also an arm 41*a* similar and symmetrical to and aligned with the arm 41. Fixed to the upper ends of the arms 41 and 41*a* and extending rearwardly thereof, are small projecting horizontal pins 45.

The car or carriage 15 comprises generally of a truck 46, and a platform 47. The truck 46 comprises a pair of parallel, symmetrical metal frames 48, disposed adjacent the side edges of the table and each having a horizontal portion 49, and a pair of downwardly extending vertical legs 50. The portions 49 of the frames 48 are formed with a pair of flanged openings 51 and said frames are interconnected and held in fixed relative relation by a pair of tubular members 53, having the ends thereof received within said flanged openings, and fixed to said frames by set screws 54. The lower ends of the legs 50 are formed with bearing openings 55, and the horizontal portions 49 of said frames, are formed with bearing openings 56 aligned with said bearing openings 55. A pair of tubular members 57 parallel to the tubular members 53, have the ends thereof received within the bearing openings 56. The tubular members 57 may oscillate within the bearing openings 56, as will appear hereinafter. Carried within the openings 55 of the legs 50 are stud shafts 59, carrying wheels 60 and 61 on ball bearings. The wheels 60 on one frame are adapted to roll on the table 11. The wheels 61 at the other side of the table are formed with peripheral grooves 62 receiving the upper edge of the rail strip 23. It will now be understood that the truck 46 is mounted on wheels and may reciprocate back and forth on the table.

For the purpose hereinafter appearing there is clamped on the ends of the tubular members 57 adjacent edge 17*a* of the table 11, split sleeves 64 formed with ratchet teeth 65. Said sleeves 64 are similar and symmetrically disposed one with respect to the other. Fixed to the inner surfaces of the truck frame 48 at the edge 17*a* of the table, adjacent tubular members 57, are horizontal pins 66 carrying symmetrically disposed pawls 67, engaging the teeth 65 of the ratchet sleeves 64. Each pawl is provided with a handle 68. The pawls and ratchets are so arranged so that the ratchet at the right (looking at Fig. 3 of the drawings) may freely rotate in a counter-clockwise direction, whereas the ratchet at the left, may freely rotate in a clockwise direction. By pressing upwardly on the handle 68, the pawls will disengage the ratchets.

Fixed on the ends of one tubular member 57 are leader arms 70 interconnected by a pair of parallel rods 71. The leader arms 70 extend radially from the tubular member 57, as shown in Fig. 3 of the drawings. Fixed to the outer ends of the other tubular members 57, are leader

arms 70a, interconnected by a pair of parallel rods 71a.

As will be described hereinafter, as the cloth piles up, the outer ends of the leader arms will move upwardly to rotate the tubular members 57 and the ratchets 64, and the pawls 67 will hold the ratchets and hence the leader arms and bars 71, 71a in any position to which the same may be lifted.

Slidably mounted on the tubular members 57 is a carriage 72 carrying a vertical pin support 72a for the platform 47. Said carriage comprises a flat horizontal plate 73 disposed between the frame members 46 and transversely of the longitudinal axis of the table 11. The pivot pin 72a is fixed to the middle of plate 73. The ends of the plate 73 are supported by a pair of parallel, channel shaped beams 75 disposed parallel to the side edges of the table 11. Fixed to the ends of each channel shaped member 75 is a hanger 76 through which the tubular members 57 pass. Each hanger 76 has a pair of parallel, vertical portions 77 and a top horizontal interconnecting portion 78. The portions 77 are interconnected by pins 79 carrying rollers 80 of curved longitudinal cross-section and engaging the tubular members 57.

On the top portions 78 of the hangers 76 are ball bearing cages 81, each carrying a ball 82 projecting above the cage. The tops of the balls 82 are somewhat above the level of the top of pivot pin 72a. The platform 47, as will be hereinafter explained, is supported by the pivot pin 72 and balls 82.

Said platform comprises a rectangular board 83 made of wood or any other suitable material, and attached to the underside thereof is a metal plate 84. Fixed to the underside of the center of the platform is a sleeve 85 rotatable receiving the upper end of the pivot pin 72. The sleeve 85 may be fixed to the platform by bolts 86 engaging a flange on said sleeve. The upper end of the pivot pin 72a is preferably rounded and may contact the underside of the plate 84. Said plate 84 is furthermore formed with four sockets 86a receiving the projecting portions of the balls 82 to hold the platform against accidental rotation on the pivot pin 72a.

It will now be understood that the platform 47 may be rotated on the truck about the central vertical pin 72a, and that the platform may be slidably moved transversely of the truck either to the right or left (looking at Fig. 8 of the drawings) on the tubular rail members 57. Upon slidably moving the platform, the support 72, for the platform moves together therewith, and the rollers 80 roll on the rails 57.

Attached to each side edge 83a of the board 83, is a metal strip 88 having a horizontal outwardly extending projection 89 formed with an opening 90. The upper edges of the truck frames 46 are formed with openings 91 adapted to register with openings 90. A pin 92 inserted through the openings 90, 91 may fix the platform to the supporting truck against rotation or sliding movement.

Fixed to the forward portions of the members 88 are upwardly extending inclined brackets 94 interconnected by a pair of spaced, parallel, horizontal guide rods 95.

There is also fixed to the rear portions of the members 88 a pair of similar, aligned, upwardly and forwardly curved brackets 97, interconnected inwardly of the outer ends thereof by a horizontal cross-rod 98. The outer ends 99 of the brackets 97 are formed with bearing openings 100. Rotatably mounted in one of said bearing openings, is a pin 101 having a reduced screw threaded inwardly extending portion 102; and screwed thereon, is a member 103 formed with a pair of aligned, parallel apertures 104. A member 105 likewise formed with a pair of apertures 106, aligned with the apertures 104, has a pin projection 107 journaled in a bearing opening 100a, formed at the end 99a of the other bracket 97. The pin 107 is formed with a screw threaded end portion 108, on which is screwed a hand nut 109. Carried on the members 103 and 105 are a pair of parallel rods 110, passing through the openings 104 and 106, and fixed to said members by nuts 111. On said rods 110, are ball bearing assemblies 112, carrying rollers 113. By loosening the hand nut 109, the members 103, 105 together with the rollers 113, may be rotated about the axis of said members, to adjust the angle of a plane passing through the axes of the rods 110.

Slidably mounted on the brackets 97, are similar, symmetrical members 115, adapted to be fixed to said brackets in adjusted position by set screws 116. The members 115 are formed with aligned notches 117, through which there extends the outer ends of a horizontal rod 118. Fixed on each end of the rod is a grooved sleeve 119. Pivoted to each member 115 is a handle 120 having bifurcated arms 121 engaging within the grooves of the sleeves 119. On each end of the rod 118 are a series of serrations or grooves 122. Slidably mounted within an opening 123 in each member 115, communicating with the notch 117 thereof, is a pin 124, an end whereof is adapted to engage the serrated portion 122 of the rod. Springs 125 are adapted to press the pins 124 within the serrations of the rod 122 to prevent accidental, longitudinal movement of the rod. By rotating the handle 120 however, the rod may be moved longitudinally.

On the rod 118 is a roller 128 mounted thereon on ball bearings and adapted to carry a roll of cloth 130. The cloth from the roll 130 passes over the rod 98, then between the rollers 113, then between the rods 95 and between the rods 71 and the leader arms 70.

The method of laying the cloth in layers with alternate layers right side up or right side down will now be described. One end of the cloth is first placed between the members 37, 37a and a weight 131 is placed on said end of the cloth. The car 15 is then moved to the left until the rods 71 are to the left of the upstanding arms 35, as shown in dotted lines in Fig. 1 of the drawings. During such movement, the cloth will unwind from the roll 130. A rod 133 is then placed on top of the layer of cloth with the ends of the rod within the slots 36. The carriage is then moved to the right until a wheel 60 strikes the upstanding arm 39, of the member 37. Member 14 thus acts as a stop for the carriage. It will be noted that the rods 71 are less in length than the space between the upstanding arms 41, 41a of the members 37, 37a. The leader arms 70 will therefore pass between the upstanding arms 41, 41a. When the rods 71 are moved to the right of and beyond the upstanding arms 41, 41a, another rod 133 is placed on the cloth to engage the outer edges 42 of said upstanding arms. The carriage may then again be moved to the left until the rods 71 are again to the left of the upstanding arms 35, and another rod 133 may then be placed within the slot 36 and

on the cloth. It will now be understood that upon moving the car to the left, said car moves beyond the member 12, the upstanding portions 35, 36 passing beneath the car and between the wheels and the leader arms. The car is then again moved to the right and the operation described above repeated.

Only two rods 133 need be used at each stop, the bottom rod being always removed and placed on top of the cloth as the carriage moves back and forth. It will now be understood that as the layers pile up, the leader arms 70 will be raised, and such movement is permitted due to the direction of the teeth 65. It will be further noted that the cloth is laid with alternate layers either right side up or right side down. As shown in Figs. 1 and 6 of the drawings, the rod 133 may have a flat head 133*a* at one end, which head engages the upstanding arm 35 at one end. The rods 133 are thus pushed inwardly until heads 133*a* engage said upstanding arm and clear the wheels 61.

It has been found that the rolls or bolts of cloth are often wound unevenly, and heretofore cloth laid by reciprocating a car on a table has been laid unevenly. With my machine however the cloth can be laid evenly. As the carriage moves back and forth, the platform 47 may be adjusted relative to the truck support 46 by slidably moving the platform on rails 57. For relatively large take up, the handles 120 may be manipulated to move the rod 118 longitudinally, whereby the layers of cloth can always be made to register one directly on top of the other as the cloth is being laid.

By properly adjusting rollers 113 the cloth coming from the roll may be tensioned.

With my machine, furthermore, the cloth may be laid with all the layers either right side up or right side down, as illustrated in Fig. 11 of the drawings. To lay the layers with the right side up or down, the cloth is mounted on the carriage as described above, except that the end of the cloth is preferably placed beneath both rods 71, instead of between said rods. One end of the cloth is then placed on the table and a weight put on said end of the cloth. The carriage is then moved to the left until the desired length of cloth is laid on the table. The cloth may then be cut and a weight placed on the cut end of the cloth to hold it down. The platform may then be rotated about the pivot pin 72*a* through an angle of 180 degrees. During such movement, the platform will rise on the balls 82 and, the balls will snap into the sockets 86*a* when the platform has been rotated the full 180 degrees. The cut end of the cloth may then be registered with the cut end of the piece of cloth that has been laid, and the weight placed on the registering ends of the cloth, and the carriage then moved to the right a sufficient distance, and the cloth again cut to the same length. The carriage may then be rotated 180 degrees to its original position, the cut end of the cloth registered with the first end, and the weight placed in position to hold the adjacent cut ends together. The carriage may then be moved to the left and the operation repeated. With such manipulation of the machine, the layers of the cloth may be laid either with the right side up or with the right side down.

Handles 15*a* may be inserted into the hollow ends of the tubular members 53 or 57, and these handles may be grasped by the operator to move the car back and forth.

It will be noted that the rod 118 may be shifted longitudinally, but said rod does not rotate. It is only the roller 128 mounted on ball bearings on the shaft 118 which rotates as the cloth is unwound. By retaining the axially shiftable shaft against rotation, and rotating the roller on roller bearings, unwinding the cloth is greatly facilitated. With such a machine, elastic or stretchable cloth, such as knitted fabric or lacy goods may easily be laid. When such goods are being laid, the platform is rotated through an angle of 180 degrees from the position shown in Fig. 1, and the cloth mounted on the roller 128 passes directly downwardly between the rods 71*a*, instead of coming up over the rod 98 and between the tensioning rollers. The cloth will then unwind by its own weight and there need be no pull on the cloth, so that the cloth may be laid without any stretching.

Although the drawings show a roll of cloth mounted on a tubular roller, it will be understood that my improved cloth laying machine may be used in connection with cloth folded in a book fold or wound around a flat board, as is well known in the art. Where a bolt of cloth rolled on a flat board is to be unwound, the bolt is unbalanced with respect to the axis of its supporting shaft thereby causing the cloth to be unwound unevenly, and with jerky movements. To obviate this difficulty when laying cloth on my improved machine from a bolt of cloth wound on a flat board, I provide means to balance the bolt.

This feature is illustrated in Figs. 12, 13 and 14 of the drawings. In said figures, there is shown a bolt 140 of cloth wound on a usual flat board 141. Adjacent the ends of the supporting shaft 142 are a pair of collars 143 to which are fixed inwardly pointing usual V-shaped metal plates 144 disposed in a plane parallel to the axis of the shaft and offset therefrom. The plates 144 are inserted into the bolt in engagement with the board 141.

It will now be understood that by reason of the board 141 being disposed at one side of the shaft 142, and the plates 144 being likewise disposed on one side of the shaft 142, the weight on the shaft is unbalanced. In unwinding cloth from such a bolt, the cloth will unwind with jerky movements. To obviate this difficulty, when laying cloth from the bolt 140 on my improved machine, I mount on the shaft 142 and adjacent one end thereof, a counter balance wheel 145 weighted on one side. The shaft 142 preferably has a portion 146 of hexagonal, cross-section. The balance wheel 145 has a collar provided with a set screw 147 which engages one face of the hexagonal shaped portion 146. By rotating the balance wheel to the proper position the operator may balance the weight on the shaft 142. The shaft 142 may be mounted in the slots of the brackets 115.

In Figs. 10 and 10*a* there is illustrated another form of end rod which may be used in place of the rod 133. The rod 133*b* shown in Figs. 10*a* and 10 may be in the form of an elongated straight flat strip of metal, wood or other suitable material. The cloth is folded over the strip, as shown in Fig. 10*a*, with the strip in horizontal position. Only one rod 133*b* need be used at each of the stops 12 and 14.

To remove the rod, the same is first turned through an angle of 90 degrees, from the position shown in Fig. 10 to the position shown in Fig. 10*a*. This turning movement produces sufficient

looseness between the cloth and rod to permit withdrawal of the latter without excessive friction between, thus obviating the danger of injury to the cloth. Upon removing the rod, the same may again be placed in horizontal position on top of the next layer of cloth.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a cloth laying machine, an elongated table, a truck on wheels mounted on said table for movement longitudinally of said table, means for supporting a bolt of cloth, and means on said truck for supporting said first means for sliding movement bodily relative to said table and the entire truck, transversely of the direction of movement of said truck.

2. A cloth laying machine comprising an elongated table, a rail on said table, a truck on wheels engaging said rail and being adapted to reciprocate back and forth on said table, a platform slidably mounted on said truck for movement transversely of said table and of the entire truck, one way or the other, and a shaft on said platform, for supporting a roll of cloth.

3. A cloth laying machine comprising an elongated table, a rail on said table, a truck on wheels engaging said rail and being adapted to reciprocate back and forth on said table, a platform slidably mounted on said truck for movement transversely of said table, and of the entire truck, a shaft on said platform, for supporting a roll of cloth, means for supporting said shaft on said platform for sliding movement longitudinally of its own axis, and a roller on said shaft adapted to carry a bolt of cloth.

4. In a cloth laying machine, an elongated cutting table, a member mounted on said table for reciprocation longitudinally of said table, a member slidably mounted on said first member for movement bodily transversely of said first member and table, means for supporting a roll of cloth, and means for mounting said first means on said second member for rotation about a vertical axis.

5. In a cloth laying machine an elongated cutting table, a member mounted on said table for reciprocation longitudinally of said table, a member slidably mounted on said first member for movement bodily transversely of said first member and table, means for supporting a roll of cloth, means for mounting said first means on said second member for rotation about a vertical axis, and means for fixing said first means to said first member against relative movement.

6. In combination, a truck on rollers, a pair of rail members fixedly interconnecting the side portions of said truck, a member slidably mounted on said rail members toward one side portion and away from the other side portion, a platform pivotally mounted on said member, and means on said platform for supporting a roll of cloth, said means comprising a shaft longitudinally slidable on said platform.

7. In combination, an elongated table, an elongated strip attached to a side edge of the table in spaced relation thereto, a member on said table adapted to support a rod about which the cloth is folded, said member having a portion interposed within the slot formed between said strip and the adjacent edge of said table, means for fixing said portion against movement relative to said table, and a car on said table and having a wheel engaging said strip.

8. In combination, an elongated table, an elongated strip attached to a side edge of the table in spaced relation thereto, a member on said table adapted to support a rod about which the cloth is folded, said member having a portion interposed within the slot formed between said strip and the adjacent edge of said table, means for fixing said portion against movement relative to said table, and a car on said table and having a wheel engaging said strip, said stop member having a pair of aligned upstanding members adjacent the opposite side edges of said table, and formed with vertical aligned slots.

9. In a cloth laying machine, a truck having side frames, a pair of parallel members fixedly interconnecting said frames, a support having rollers engaging said pair of members and movable toward one frame and away from the other frame, a platform having a vertical pivot connection to said support, and means for supporting a bolt of cloth, on said platform.

10. In a cloth laying machine, a truck comprising a pair of side frames supported on wheels, a pair of parallel members fixedly interconnecting said frames, a pair of hangers provided with rollers engaging each of said parallel members, a vertical pivot pin supported by said hangers, a platform over said truck, having a socket to engage said pivot pin, balls on said hangers engaging the underside of said platform, and means on said platform to support a bolt of cloth.

11. In a cloth laying machine, a truck comprising a pair of side frames supported on wheels, a pair of parallel members fixedly interconnecting said frames, a pair of hangers provided with rollers engaging each of said parallel members, a vertical pivot pin supported by said hangers, a platform over said truck, having a socket to engage said pivot pin, balls on said hangers engaging the underside of said platform, and means on said platform to support a bolt of cloth, said means comprising a horizontal shaft shiftable longitudinally of its own axis, means for retaining said shaft against rotation, and a tubular roller on said shaft.

12. In a cloth laying machine, a truck comprising a pair of side frames supported on wheels, a pair of parallel members fixedly interconnecting said frames, a pair of hangers provided with rollers engaging each of said parallel members, a vertical pivot pin supported by said hangers, a platform over said truck, having a socket to engage said pivot pin, balls on said hangers engaging the underside of said platform, means on said platform to support a roll of cloth, said means comprising a horizontal shaft, shiftable longitudinally of its own axis, and manual means for shifting said shaft.

13. In a cloth laying machine, a truck comprising a pair of side frames supported on wheels, a pair of parallel members fixedly interconnecting said frames, a pair of hangers provided with rollers engaging each of said parallel members, a vertical pivot pin supported by said hangers, a platform over said truck, having a socket to engage said pivot pin, balls on said hangers en-

gaging the underside of said platform, means on said platform to support a roll of cloth, said means comprising a horizontal shaft, shiftable longitudinally of its own axis, manual means for shifting said shaft, and means for retaining said shaft in any position to which the same may be shifted.

14. In combination, a shaft, means for supporting said shaft for rotation, a pair of wedge shaped members mounted on said shaft, for supporting a board with a bolt of cloth thereon, said wedge shaped members being adapted to engage one side of said board, and a counter balancing means on said shaft to balance said members.

15. In a cloth laying machine, a table, a carriage reciprocable thereon, means on the carriage for supporting a bolt of cloth to be laid on the table, a member on said table having a pair of parallel upstanding portions, forming a slot therebetween, and an end rod comprising a flat, straight elongated member disposed transversely of the table and engaging within said slot, and about which the cloth from said bolt may be folded, said slot being wide enough to receive the rod when the rod is in flat horizontal position.

16. In combination, an elongated table, a car mounted on said table for reciprocation longitudinally of said table and having side frames supported on wheels rolling on the table, means on said car for supporting a bolt of cloth to be laid in layers on the table, a pair of members disposed transversely of the table and adapted to hold rods about which the cloth is folded, to determine the length of cloth laid on the table, both being adjustable longitudinally of said table, means for fixing said members to said table in various longitudinally adjusted positions, at least one of said members being disposed between the wheels on the side frames to permit said car to pass the same upon reciprocating said car on said table.

17. In a cloth laying machine, a truck having a pair of parallel side frames, rail means perpendicular to said frames, fixedly interconnecting said frames, wheels on said frames, a member slidable bodily on said rail means in one direction toward one of said side frames and away from the other, and in an opposite direction toward said other frame and away from the first frame, a member mounted for rotation on said first member about a vertical axis, and means on said second member for supporting a bolt of cloth.

18. In a cloth laying machine, a truck having a pair of parallel side frames, rail means perpendicular to said frames, fixedly interconnecting said frames, wheels on said frames, a member slidable bodily on said rail means in one direction toward one of said side frames and away from the other, and in an opposite direction toward said other frame and away from the first frame, a member mounted for rotation on said first member about a vertical axis, means on said second member for supporting a bolt of cloth, said last means comprising a horizontal shaft disposed perpendicular to said frames, and means on said second member to support said shaft for sliding movement longitudinally of its axis.

19. In a cloth laying machine, a truck having a pair of parallel side frames, rail means perpendicular to said frames, fixedly interconnecting said frames, wheels on said frames, a member slidable bodily on said rail means in one direction toward one of said frames and away from the other, and in an opposite direction toward said other frame and away from the first frame, a member mounted for rotation on said first member about a vertical axis, means on said second member for supporting a bolt of cloth, said last means comprising a horizontal shaft disposed perpendicular to said frames, means on said second member to support said shaft for sliding movement longitudinally of its axis, means for slidably moving said shaft, and means for retaining said shaft in various longitudinal positions.

20. In a cloth laying machine, a truck comprising a pair of parallel side frames, means for fixedly interconnecting said frames to one another, wheels carried by said frames, whereby said truck may be reciprocated on a cloth laying table, a member, means on said member to support a bolt of cloth, and means for supporting said member on said truck for rotation about a vertical axis, and for sliding movement bodily relative to said truck, transversely of said side frames.

21. In a cloth laying machine, a truck adapted to be mounted on an elongated cutting table for recipriation thereon, a member, means thereon to support a bolt of cloth, and means for supporting said member on said truck for rotation about a vertical axis, and for sliding movement bodily relative to said truck and table, transversely of the direction of movement of said truck.

22. A cloth laying machine comprising a truck on rollers adapted to be mounted on an elongated cutting table for reciprocation longitudinally thereof, a member mounted on said truck for sliding movement bodily, transversely of said truck toward one side of the truck and away from the other side of the truck, a platform mounted on said member for rotation about a vertical axis, a horizontal shaft adapted to carry a bolt of cloth, and means on said platform for supporting said shaft for sliding movement longitudinally of its own axis.

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