March 13, 1951 H. J. DE LASSUS 2,544,951

CLOTH SPREADING MACHINE

Filed Oct. 5, 1948 3 Sheets-Sheet 1

FIG. 1

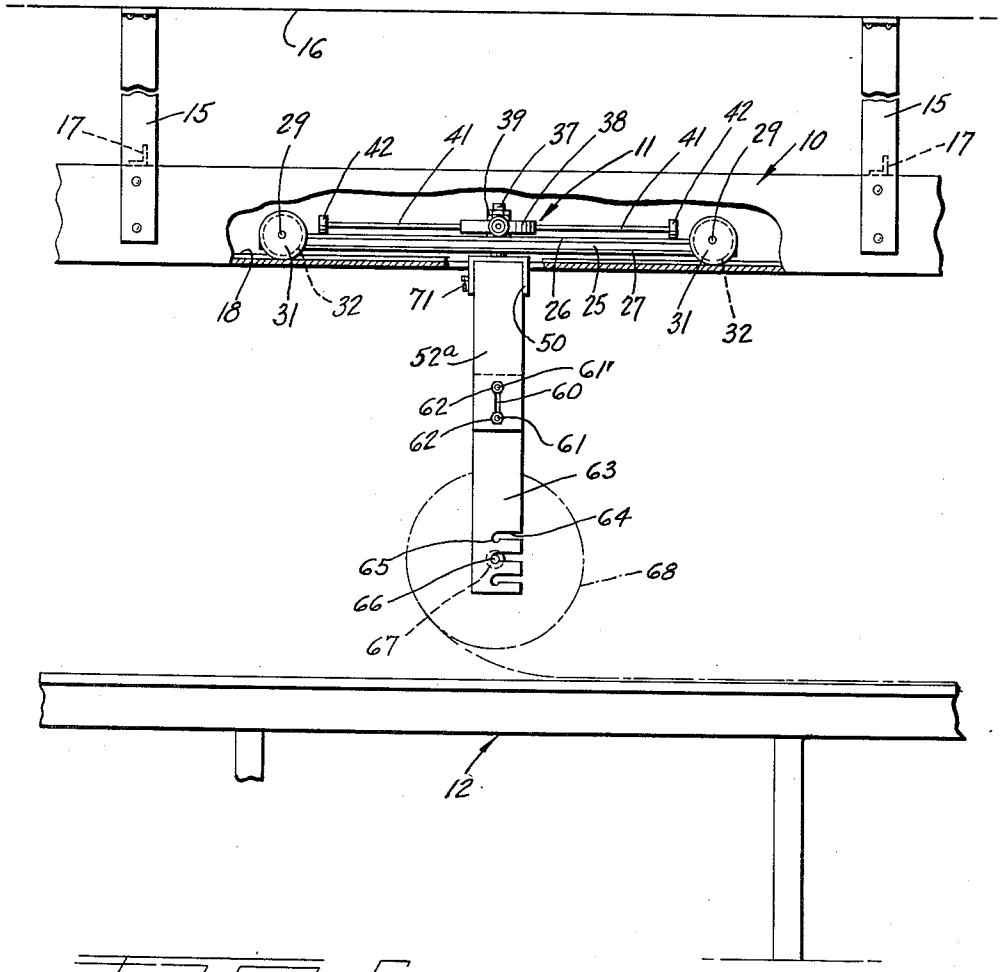
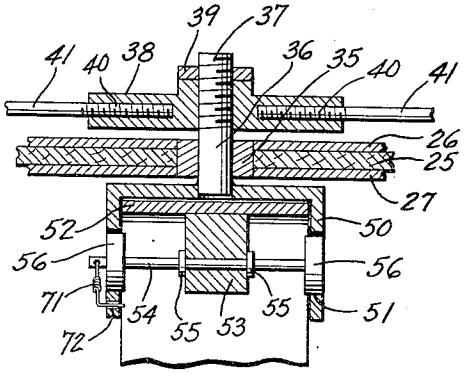


FIG. 5



Inventor

Harold J. DeLassus

By

Wilson & Co.

Attorneys

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Filed Oct. 5, 1948 3 Sheets-Sheet 2

FIG. 2.

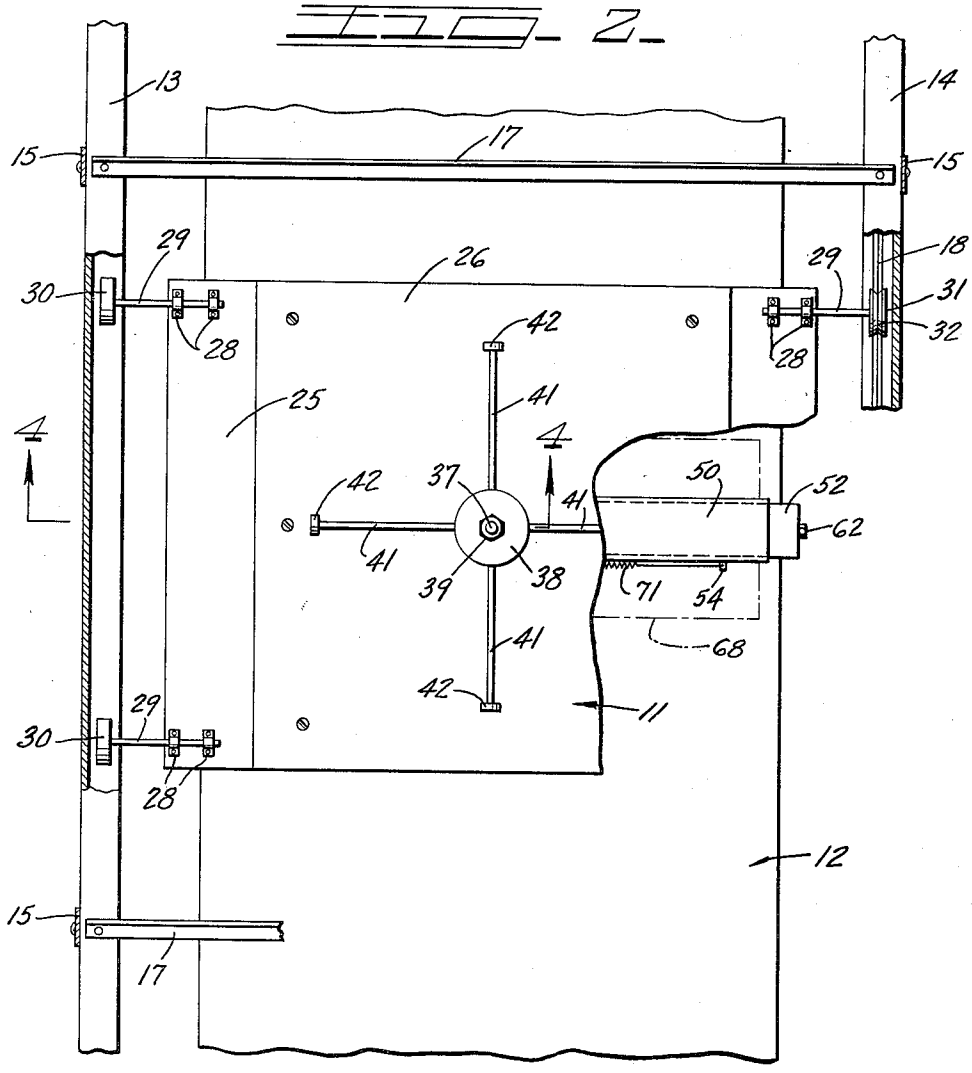
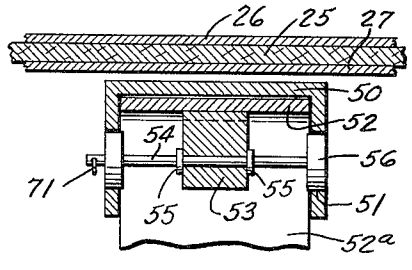


FIG. 6.



Inventor

Harold J. DeLassus

By A. B. Wilson & Co.

Attorneys

March 13, 1951 H. J. DE LASSUS 2,544,951

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Filed Oct. 5, 1948 3 Sheets-Sheet 3

FIG. 3.

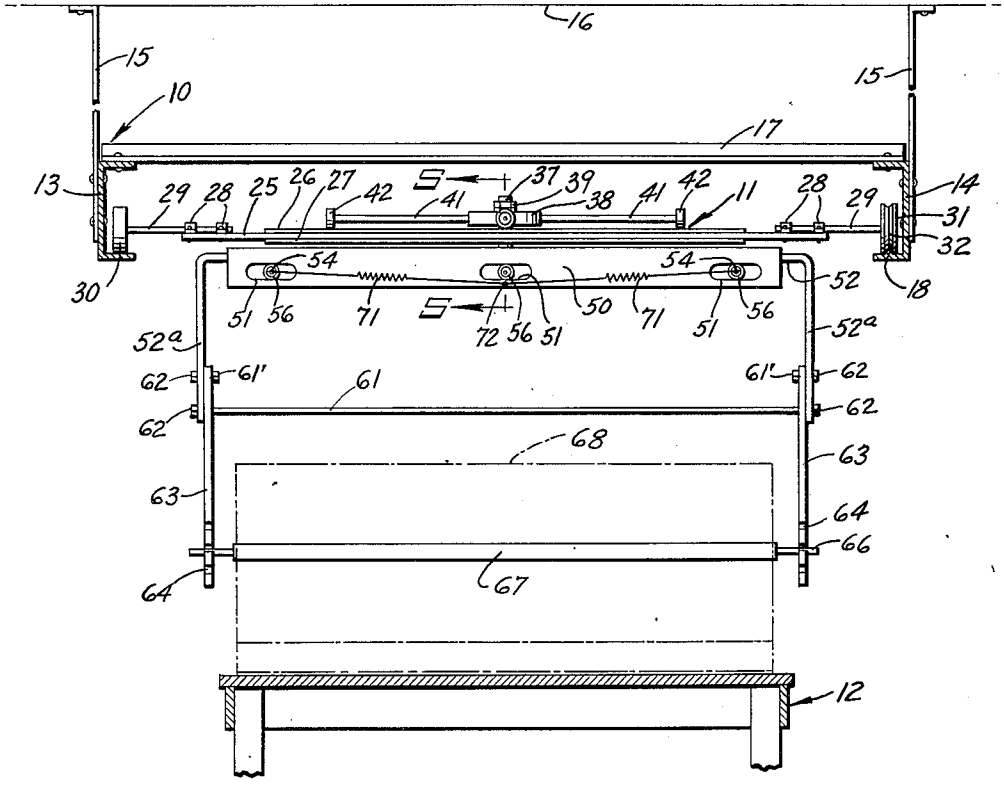
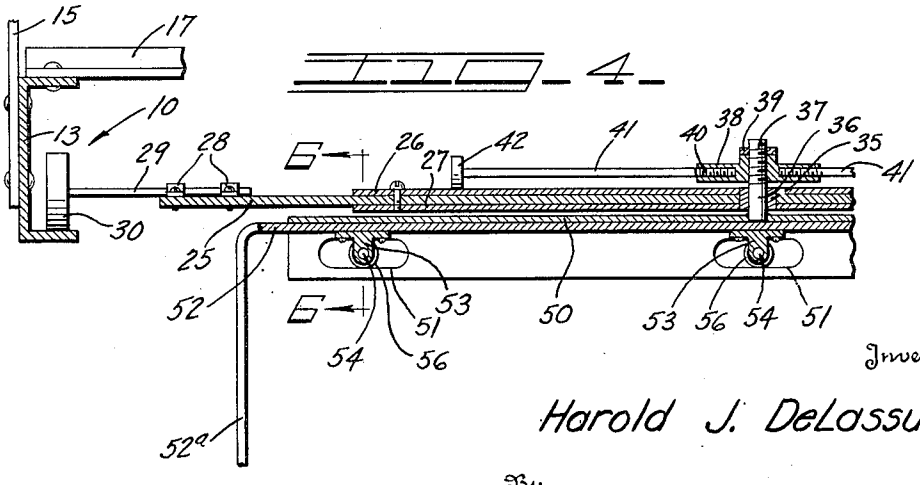


FIG. 4.



Inventor

Harold J. DeLassus

By A. B. Wilson & Co.

Attorneys

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CLOTH SPREADING MACHINE

Harold Joseph De Lassus, Salisburg, Mo.

Application October 5, 1948, Serial No. 52,939

10 Claims. (Cl. 270—31)

1

This invention relates to a cloth spreading machine, and more particularly to a one way spreader adapted for the laying or spreading of woolen or other cloth on a cutting table. It is realized by clothing manufacturers that material with a nap or twill cannot be reversed in pair. Two ply face to face must run in the same direction from the collar or waist of a garment to the hem or cuff.

A primary object of this invention is the provision of an improved spreading device longitudinally movable above a cutting table suspended from an overhead trackway, thus permitting free access to the table at all times.

A further object of the invention resides in the provision of an improved cloth laying carriage having means whereby the bolt of cloth may be reversed at the end of its travel over the cutting table in such manner that alternate layers of cloth may be paired and matched face to face with the ply running in the same direction.

An additional object of the invention is the provision of improved means whereby the carriage may be shifted transversely relative to the direction of travel in such manner that successive layers of cloth may be substantially perfectly aligned with a minimum of effort and difficulty.

An additional and more specific object of the invention resides in self-centering means for centering the bolt carrier transversely to the direction of travel of the carriage.

Still another object of the invention resides in the provision of height adjusting means permitting the laying of a pile of cloth to any desired height and from any desired size of bolt, from the same machine.

A still further object of the invention is the provision of means whereby the cloth may be layed without undue stretch or tension thereon in such manner as to provide a substantially perfect pattern of cloth in natural form.

An additional object of the invention is the provision of a device or machine of this character which may be readily and expeditiously operated by a single operator, with a considerable saving of time, and which is sturdy and durable in construction, reliable and efficient in operation and relatively simple and inexpensive to manufacture and assemble.

Other objects will in part be obvious, and in part be pointed out as the description of the invention proceeds, and in connection with the accompanying drawings, wherein there is disclosed a preferred embodiment of this inventive concept.

In the drawings:

Figure 1 is a side elevational view, partially broken away, disclosing one form of this inventive concept.

Figure 2 is a top plan view of the structure of Figure 1, certain portions thereof being broken away.

2

Figure 3 is an end elevational view of the construction of Figures 1 and 2, portions thereof being shown in section.

Figure 4 is an enlarged sectional view taken substantially along the line 4—4 of Figure 2 as viewed in the direction indicated by the arrows.

Figure 5 is an enlarged sectional view taken substantially along the line 5—5 of Figure 3 as viewed in the direction indicated by the arrows, and

Figure 6 is an enlarged sectional view taken substantially along the line 6—6 of Figure 4 as viewed in the direction indicated by the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings in detail, there is generally indicated at 10 an overhead trackway adapted for the support of a carriage generally indicated at 11 and positioned over a cutting table, generally indicated as 12, the latter being of any desired or conventional type.

The track 10 is comprised of two oppositely disposed channel members 13 and 14, adapted to be suspended as by means of hangers 15 suitably spaced and secured to the ceiling 16, the track being longitudinally arranged above the cutting table 12. Channel members 13 and 14 may be connected by suitably spaced transversely extending reinforcing members 17, for the purposes of holding the track channels properly spaced and in longitudinal alignment with cutting table 12. It is to be noted that track 13 may have a substantially plane or flat lower surface while track 14 is provided with a longitudinally extending rib or ridge 18, the purpose of which will be more fully described hereinafter.

It is also to be noted that the tracks 13 and 14 may be spaced at any suitable distance, but, as best shown in Figures 2 and 3, are spaced apart a distance slightly in excess of the width of the cutting table 12, which in turn may be of any desired width suitable for the purpose for which it is intended.

The carriage 11 of the device is comprised of a rectangular plate 25, of any desired material, such as plywood or the like, on opposite sides of which are secured flat rectangular plates 26 and 27, preferably of metal. Secured adjacent the corners of plate 25, as by means of conventional mounting brackets 28, are a plurality of stub axles 29. The axles 29 extend transversely of the tracks 13 and 14, those adjacent track 13 carrying wheels or rollers 30, provided with plane peripheral surfaces, serving as idler wheels, adapted to move longitudinally within the track 13. The axles 29 adjacent the track 15 also carry idler wheels or guide wheels 31 provided with peripheral grooves 32 adapted to ride on the ridge 18, which thus serves as a longitudinal guide assuring substantial

alignment of the carriage 11 and its associated elements while moving along the trackway.

As best shown in Figures 4 and 5 the assembly comprised of plates 25, 26 and 27 secured together by suitable fastenings as shown, is provided with a centrally positioned bore, within which is seated a suitable bearing 35, having mounted for free rotation therein a stub axle 36. The upper extremity of axle 36 is threaded at 37, and carries a disc 38, the latter being secured thereon as by a nut 39. Disc 38 is provided with a plurality of threaded bores, preferably disposed at 90° angles in respect to each other, and in each of which is secured the threaded extremity 40 of a rod 41, the rods thus extending outwardly from the disc at substantially right angles to each other. Each rod carries at its outer extremity a roller 42, preferably of ball-bearing construction, adapted to ride on the upper plate 26. The rollers engage depressions or seats (not shown) in the plate 26 and the parts 41, 42 thus serve as a stabilizing device to hold axle 36 in a desired position.

It will thus be seen that the axle 36, together with the associated mechanism secured to the lower extremity thereof, to be more fully described hereinafter, is free to rotate in a full 360° arc relative to that portion of the carriage assembly 11 comprised of plates 25, 26 and 27, supported for longitudinal movement on the tracks 13 and 14.

The lower extremity of the stub axle 36 is suitably secured, in any desired manner, as by welding or the like, to a channel-shaped member 50, the depending flanges of which are provided with a plurality of longitudinal slots 51, the slots of each depending portion being in substantial alignment with those of the other transversely of the channel 50.

Extending longitudinally in the channel member 50 is a plate or strip 52, the extremities of which extend beyond the ends of member 50, and are bent downwardly at right angles to form depending portions 52*a* which extend downwardly a substantial distance toward the cutting table 12. The underside of strip 52 is provided with a plurality of supporting brackets 53, apertured to receive axles 54, secured in alignment as by collars 55 (Figure 6), the axles 54 carrying upon their outer extremities suitable rollers 56, preferably of ball bearing type, adapted for longitudinal movement within slots 51. It will thus be seen that the strip 52 may move longitudinally relative to the member 50 within limits imposed by the slots 51.

The lower extremities of depending portions 52*a* are provided with vertical slots 60 through which are adapted to extend rods or bolts 61, 61' which secure, as by means of nuts 62 depending and adjustable extensions or hanger straps 63. These hangers 63 are provided at their lower extremities with a plurality of notches 64, having indentations or seats at their inner extremities, adapted for the reception of the pins of a transversely extending axle 66 which carries a roller 67, the latter preferably being mounted on suitable anti-friction bearings on the axle 66 to facilitate free rotation thereof. Roller 67 is of any suitable diameter, but preferably of a size permitting ready insertion in the central aperture of a bolt of cloth or the like, indicated by dotted lines at 68. It may here be noted that, if desired, one or more of the long bolts or rods 61 may extend transversely between the strips 63, to serve as additional aligning and reinforcing means therefor. It will thus be seen that the height of the bolt of cloth 68 may be readily adjusted relative to the surface of the cutting table 12, minor adjustments being effected by the relative positioning of the extremities of axle 66 in selected aligned slots or notches 64.

From the foregoing the operation of the apparatus should now be readily understandable. When it is desired to position a piece of cloth on cutting table 12 the entire carriage assembly 11 is first moved on the track assembly 10, to one end of the table, a bolt of woolen cloth or other suitable material is positioned on roller 67, by removal of axle 66 from its associated slots, and the end of the material suitably secured adjacent the end of the table. The carriage assembly is then moved longitudinally of the cutting table 12 along assembly 10, the cloth freely following there behind, the roller bearing mounting of roller 67 permitting natural laying of cloth, and precluding tension thereon, until the other end of the table is reached. The material is then cut and the carriage returned to the opposite end of the track assembly.

Assuming that it is now desired to lay a piece of material for the purpose of cutting the opposite side of a garment, and in order that the ply may run in the same direction, the assembly comprised of channel member 50 and its associated elements including the bolt 68 is now rotated through an angle of 180° on the stub axle 36, and the previous operation is then repeated. The stabilizing means 41, 42 tends to hold the bolt 68 at right angles to the edge of the table 12. It is to be noted that due to the uneven rolling of bolts of cloth, in the absence of provision for transverse movement of the bolt during laying some unevenly aligned edges may result. The movable relationship of the member 52, relative the channel member 50 permitted by the rollers 56 within the slots 51 permits and facilitates ready alignment of the edges of the several layers of cloth. It may here be pointed out that member 52 is normally centered relative to member 50 by means of coil springs 71, the extremities of which are secured to the outer ends of axles 54, and to a centrally positioned aperture 72 in one depending flange of member 50 as shown in Figure 3. Obviously the above described operation may be repeated as many times as desired, and the relative height of the bolt above the cutting table suitably adjusted in the manner previously described to accommodate the increasing height of pile of layers of cloth on the table.

It is to be noted that the invention provides numerous advantages over spreaders now in use. The mounting of the entire device or machine on the ceiling provides a permanent installation completely out of the way and gives more room at the cutting table and enables the operator to rotate the carriage with greater ease and with a considerable saving in time. A complete rotation of 360° allows perfect pairing of material without removing the bolt from the machine, thereby increasing production and eliminating undue handling of the material. The slotted carriage enables the operator to readily shift the cloth or other material laterally a few inches against the tension of the centering springs 71 as it unrolls, thereby keeping each successive lay along the same straight line and effecting considerable saving in time and material in the cutting room. The height adjustment for the bolt allows the cloth to be spread with the bolt un-

rolling close to the table and hence prevents air from getting under the cloth. It also allows the material to unroll naturally and freely without stretch or tension. It further enables the operator to lay cloth to any depth on the one machine.

While in the foregoing there has been described a preferred embodiment of this inventive concept it is to be understood that numerous modifications may be made within the scope of the appended claims. As an example of such modifications a suitable motor may be provided to impart longitudinal movement to the carriage assembly, or, alternatively, handles may be positioned in any desired locality to facilitate manual movement. Similarly suitable stop means such as indentations to receive rollers 42 may be formed in the plate 26 to hold the rotatable assembly in desired transverse alignment relative to the cutting table.

It is therefore to be understood that all matter herein described and shown in the accompanying drawings is to be interpreted merely as a illustrative and not in a limiting sense.

I claim:

1. In a machine of the character described in combination, an overhead track, a carriage plate longitudinally movable thereon, a stub axle extending through and rotatable in said plate, stabilizing means secured to the upper end of said axle and including an annular series of rollers to rotate on the upper side of said plate, a horizontal supporting member fixed at its center to the lower end of said axle, a bolt-carrying member carried by and shiftable lengthwise of said supporting member, and spring means for centering said bolt-carrying member on said supporting member.

2. In a machine of the character described, in combination, an overhead track, a carriage longitudinally movable thereon, a vertical stub axle rotatably mounted in said carriage, a horizontal supporting member beneath said carriage and secured at its center to said axle, a bolt-carrying member carried by and shiftable lengthwise of said supporting member, and spring means for centering said bolt-carrying member with respect to said supporting member.

3. In a machine of the character described, in combination, an overhead track, a carriage longitudinally movable thereon, a horizontal supporting member beneath said carriage, means pivoting the center of said member to said carriage for rotation, an elongated bolt-carrying member slidably supported on said supporting member for longitudinal movement, and spring means for centering said bolt-carrying member on said supporting member.

4. In a machine of the character described, in combination, an overhead track, a carriage longitudinally movable thereon, a stub axle rotatably mounted in said carriage and depending therefrom, a channel member secured to the depending end of said axle and having its flanges projecting downwardly, a bolt-carrying member within said channel member, and means permitting said bolt-carrying member to shift longitudinally relative to said channel member, said last-mentioned means including aligned slots in the depending flanges of said channel member and rollers carried by said bolt-carrying member and movable in said slots.

5. In a machine of the character described, in combination, an overhead track, a carriage longitudinally movable thereon, a stud axle rotatably

mounted in said carriage and depending therefrom, a channel member beneath said carriage and secured to said axle, a bolt-carrying member within said channel member, and means for mounting said bolt-carrying member for sliding movement longitudinally of said channel member, said bolt-carrying member including depending extremities, a bolt-supporting roller extending between said extremities, and means permitting a longitudinal extension of said depending extremities.

6. In a machine of the character described, in combination, an overhead track, a carriage longitudinally movable thereon, a stub axle rotatably mounted in said carriage, a channel member beneath said carriage and supported by said axle, a bolt-carrying member in said channel member, means for mounting said bolt-carrying member for sliding movement longitudinally of said channel member, and spring means for centering said bolt-carrying member relative to said channel member.

7. In a machine of the character described, in combination, an overhead track, a carriage longitudinally movable thereon, a vertical stub axle rotatably mounted in said carriage, a horizontal supporting member beneath said carriage and secured at its center to said axle, a bolt-carrying member carried by and shiftable lengthwise of said supporting member, and means for insuring horizontal disposition of said members, said last-mentioned means including a spider secured to the upper end of said axle and carrying rollers rotatable on the upper side of said carriage.

8. In a machine of the character described, in combination, an overhead track including a pair of opposed, longitudinally extending, channel track members, at least one of which is provided on its lower flange with a longitudinally extending rib, a carriage plate disposed horizontally between said track members, wheels carried by said plate and disposed in said track members, certain of said wheels having grooved peripheries to engage said rib to guide said carriage plate longitudinally of said overhead track, a rotatable axle extending through said plate, stabilizing means secured to the upper end of said axle and including an annular series of rollers to rotate on the upper side of said plate, a horizontal channel member secured at its center to the lower end of said axle, a bar slidable in said horizontal channel member and having depending extremities, and bolt-carrying means supported by said depending extremities.

9. The structure of claim 8 in which said depending extremities of said bar include vertically adjustable hangers, and the latter have notches to receive said bolt-carrying means.

10. The structure of claim 8 together with spring means for centering said slidable bar in said horizontal channel member.

HAROLD JOSEPH DE LASSUS.

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