C. J. SUSSMAN & T. A. HILL.

FABRIC LAYING MACHINE.

APPLICATION FILED JAN. 25, 1917.

1,257,421.

Patented Feb. 26, 1918.

4 SHEETS—SHEET 1.

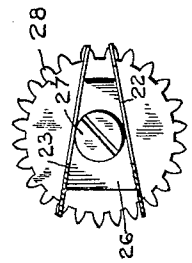


FIG. 2

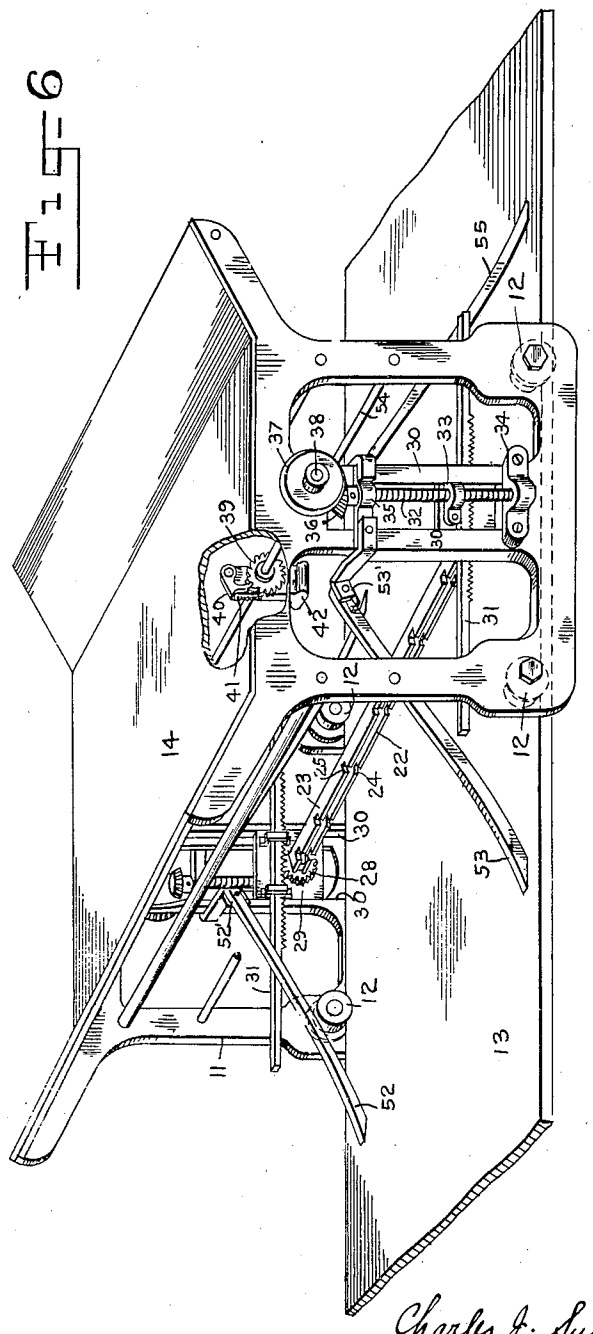


FIG. 1

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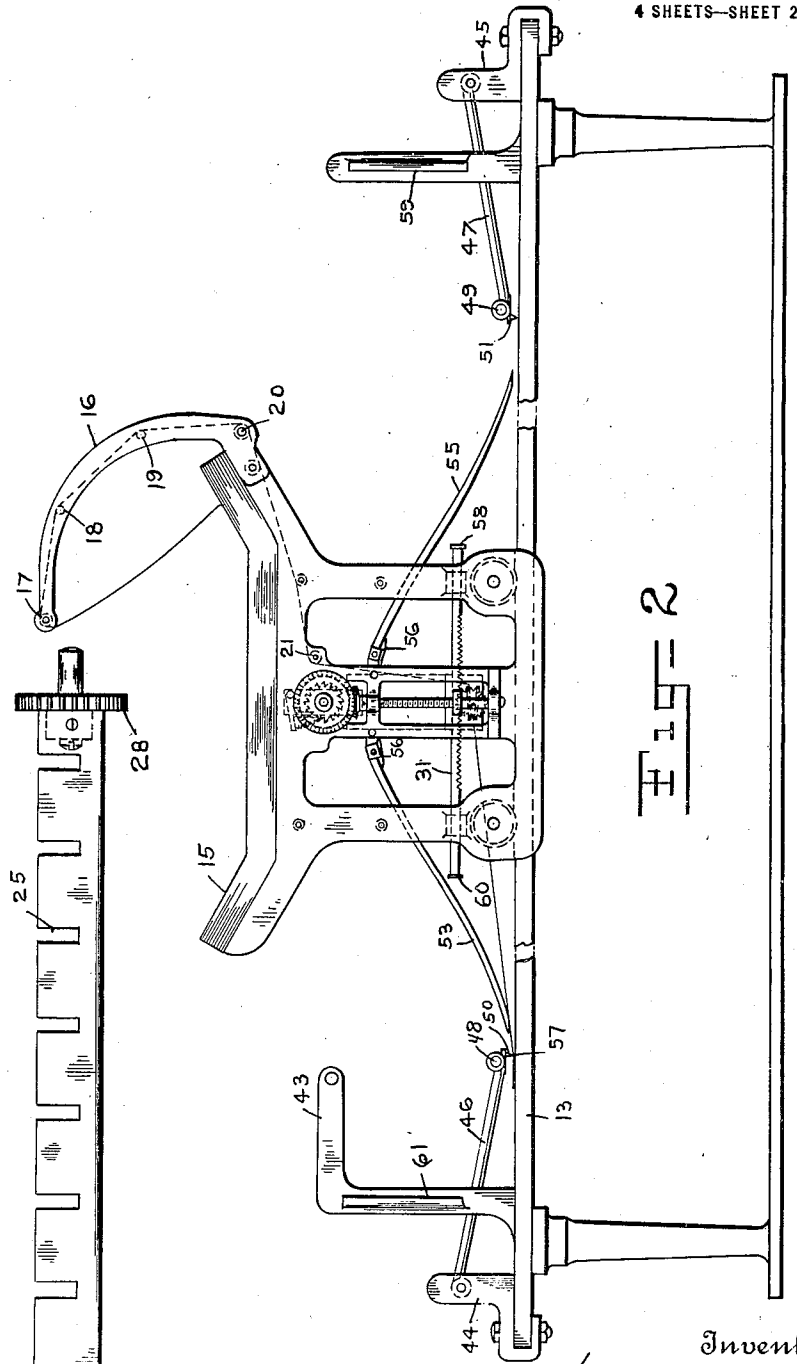


FIG. 2

FIG. 3

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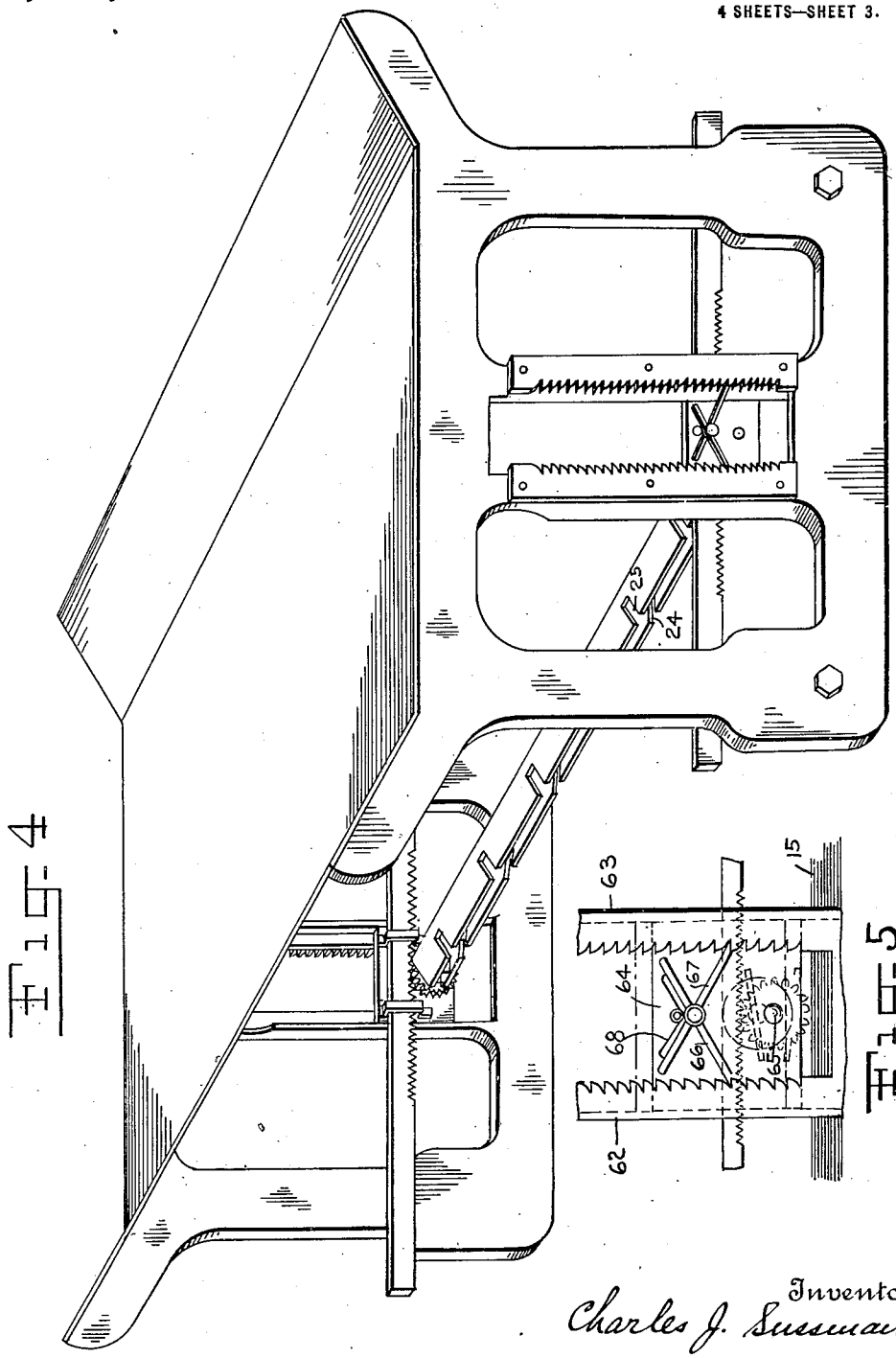


FIG. 4

FIG. 5

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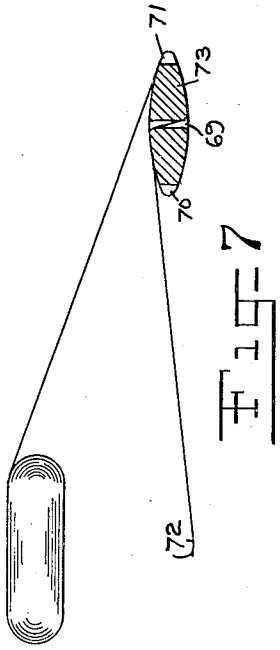


FIG. 7

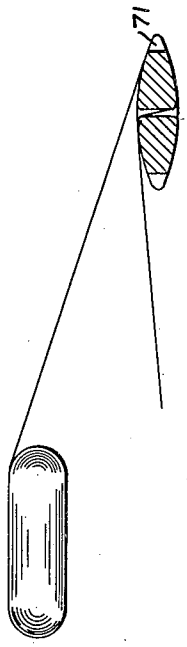


FIG. 9

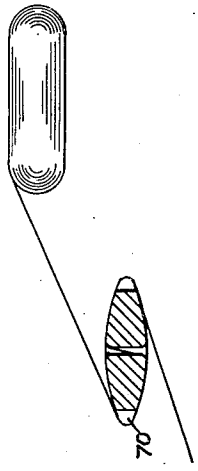


FIG. 8

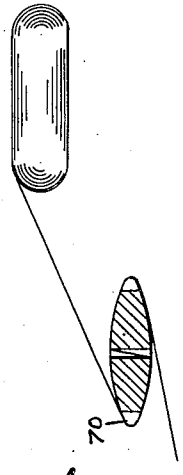


FIG. 10

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UNITED STATES PATENT OFFICE.

CHARLES J. SUSSMAN AND THOMAS A. HILL, OF BROOKLYN, NEW YORK.

FABRIC-LAYING MACHINE.

1,257,421. Specification of Letters Patent. Patented Feb. 26, 1918.

Application filed January 25, 1917. Serial No. 144,468.

To all whom it may concern:

Be it known that we, CHARLES J. SUSSMAN and THOMAS A. HILL, citizens of the United States, both residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fabric-Laying Machines, of which the following is a specification, reference being nad therein to the accompanying drawing.

Our invention relates to improvements in cloth laying or folding machines, and more particularly has reference to a type of machine adapted for laying successive layers of fabric in a pile conveniently for cutting upon a table.

In the accompanying drawings we have illustrated in Figure 1 in perspective a machine disclosing an embodiment of our invention, parts broken away. Fig. 2 is a side elevation of the same upon a table partly broken away, showing certain coöperating parts upon the table. Fig. 3 is a side view of the folding bar. Fig. 4 is an enlarged perspective view and modified form of folding bar lifting mechanism and Fig. 5 a detail thereof. Fig. 6 an end view of the folding bar, and Figs. 7 to 10 inclusive are diagrammatic illustrations of a modified form of folding bar showing the different positions of the fabric as the same is folded.

Referring now more particularly to Fig. 1 it will be observed that any suitable form of carriage frame such as 11 may be provided with suitable rollers such as 12 adapted to ride upon the edge of a table such as 13. This carriage is preferably provided at the top with a table or platform 14 upon which the goods may be laid as indicated at 15 in Fig. 2. A bracket such as 16 is also preferably provided with rollers such as 17, 18, 19 and 20 over which the fabric is drawn as shown in dotted outline in Fig. 2 and from which it passes over the roller 21 down through the folding bar shown to better advantage in Figs. 1, 3 and 6. This folding bar preferably comprises two bars such as 22—23 provided with cut-away portions such as 24—25 and secured at the ends by a suitable separating member such as 26 preferably a further distance at one side than the other as shown to advantage in Fig. 6. A bolt or other suitable securing means such as 27 passes through the heads such as 26 and secures thereto a pinion such as 28 which is rotatably mounted within a block such as 29 adapted to slide within the guides 30. The pinion 28 is also preferably engaged by the rack 31 so that by shifting the rack right or left looking at Fig. 1 the pinion 28 and the folding bars 22—23 is rotated thereby, all of said parts being mounted to be carried by the carriage frame 11. The block 29 is adapted to be raised and lowered within the guides 30 by the worm 32 which engages the threaded socket 33 attached to said block, the other end of the same being seated in the block 34 and the opposite extremity being held by any suitable means such as the bracket 35. At the upper end of the worm 32 is preferably secured the pinion 36 which engages the pinion 37 upon the shaft 38, said shaft also being provided with a ratchet wheel 39 adapted to be engaged by the pawl 40 which is normally retained in engagement therewith by any suitable means such as the spring 41. The pawl 40 is in turn pivotally mounted upon the block 42 which is adapted to rotate in one direction upon the shaft 38 but which when rotated in the opposite direction causes the pawl 40 to engage the ratchet wheel 39 thereby turning said shaft 38 and the pinion 37 secured thereto, and this in turn rotates the pinion 36, and the worm 32 which lifts the block 29 and the bar 22—23 rotatably secured therein, it being understood that said mechanism is substantially the same at both sides of the machine.

At one end of the table 13, shown to better advantage in Fig. 2, is mounted a suitable bracket such as 43 the inner end of which is in a position to strike the block 42 when the carriage 11 is pushed to the leftward extremity of the table, thus swinging the block 42 lefthandedly and thereby raising the folding bar 22—23 a predetermined amount. In this way each time the carriage reaches the left end of the table, the folding bar is lifted sufficiently to accommodate the growing thickness of the pile of cloth being laid and folded upon the table.

The applicants make no claim to this automatic means for raising the folding bar as the pile of cloth accumulates, the same being shown in substantially the same details in an earlier U. S. Letters Patent granted to F. H. Dobeck, No. 481,933 on the 6th day of September, 1892.

At opposite ends of the table are preferably secured suitable standards or supports such as 44—45 upon which are pivoted suit-

able arms such as 46—47 carrying cross-bars 48—49 provided with pins such as 50—51 spaced apart so as to engage through the openings 24—25.

52 to 55 inclusive indicate bearing bars pivotally mounted upon the machine as indicated at 52′—53′ and 56 indicates small stops or projections adapted to maintain the bearing bars just clear of the table. As the carriage is thrown to one side of the table, say leftwardly, the bar 48 rides upwardly on the bearings 52—53 until the ends of the rod 48 pass beyond the pivotal bearings 52′—53′. Then the bar 48 drops and the points 50 thereof pass through the cut-away portions 24—25 in the folding bar and thus pin and hold the fabric as shown at 57. The carriage may now be pushed rightwardly looking at Fig. 2, and when the end 58 of the rack 31 strikes the upright 59 it rotates the folding bar 180° thereby presenting the cut-away portions 24—25 thereof in position to receive the pins 51 of the bar 49 which in the meantime has passed upwardly on the bearing bars 54—55 and when the carriage has traveled sufficiently far rightwardly said bar is released and engages the fabric as before stated. The carriage may now be moved leftwardly again and when the other end 60 of the rack engages the side 61 of the bracket 43 the folding bar is again rotated back 180°, thus presenting its cut-away portions to the teeth 50 of the bar 48 which penetrate the fabric as aforesaid and so on the carriage is shifted back and forth along the table allowing the cloth to be piled and folded automatically until the entire bolt, roll or pile such as 15 has been completely folded and laid for cutting.

In the modification shown in Figs. 4 and 5 we have illustrated a form of device for automatically raising the folding bar. 62—63 indicate a pair of parallel tooth members at one side between which the block 64 may be lifted, said block carrying the folding bar upon a pin such as 65 or by other suitable means. As the cloth piles up, the folding bar is lifted thereby. The block 64, is provided with a pair of engaging pawls 66—67 which are normally projected by any suitable means such as the spring 68, and said pawls engage the teeth in the parallel bars 62—63, thus the folding bar is automatically secured in elevated position as the cloth piles up.

In the modification shown in Figs. 7 to 10 inclusive the folding bar is shown as an integral bar substantially elliptical in cross section provided with a central longitudinally extending cut-away portion 69 and cut-away portions 70—71 to allow for the passage of the pins 50—51. In starting, the fabric is pinned at 72 and when the bar 73 reaches the right extremity of the table the pins drop through the cut-away portions 71 holding the goods firmly at that point. The bar may now be rotated and by traveling leftwardly presents the goods in position to be pinned through the cut-away portions 70. By now rotating the bar again in the reverse direction the goods will be presented in position to receive the pins through the cut-away portions 71 and by again rotating the bar 360° and traveling leftwardly the cut-away portions will again be presented at the left of the machine to receive the pins for holding the goods. Thus it will be seen that a single bar may be substituted and of course the cut-away portion 69 will preferably be sufficiently rounded at the corners to prevent undue friction or binding upon the fabric.

Of course it will be understood that various modifications may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

We claim:

In combination with a fabric laying machine, a support, a carriage adapted to be moved along said support, grippers upon said support, a fabric folding member beneath said carriage adapted to be rotated upon its longitudinal axis and having pinions at opposite ends, vertically movable bearings for said member, racks slidably secured within said bearings and engaging said pinions, means upon said support at each side of said carriage adapted to engage said rack when said carriage is moved a predetermined distance whereby said member is partially rotated, and means upon said support and in combination with said bearing for lifting the same a predetermined amount each time said carriage is moved a predetermined distance in one direction upon said support.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

CHARLES J. SUSSMAN.
THOMAS A. HILL.

Witnesses:
ETHEL GARDNER,
ANNA F. DUFFY.