

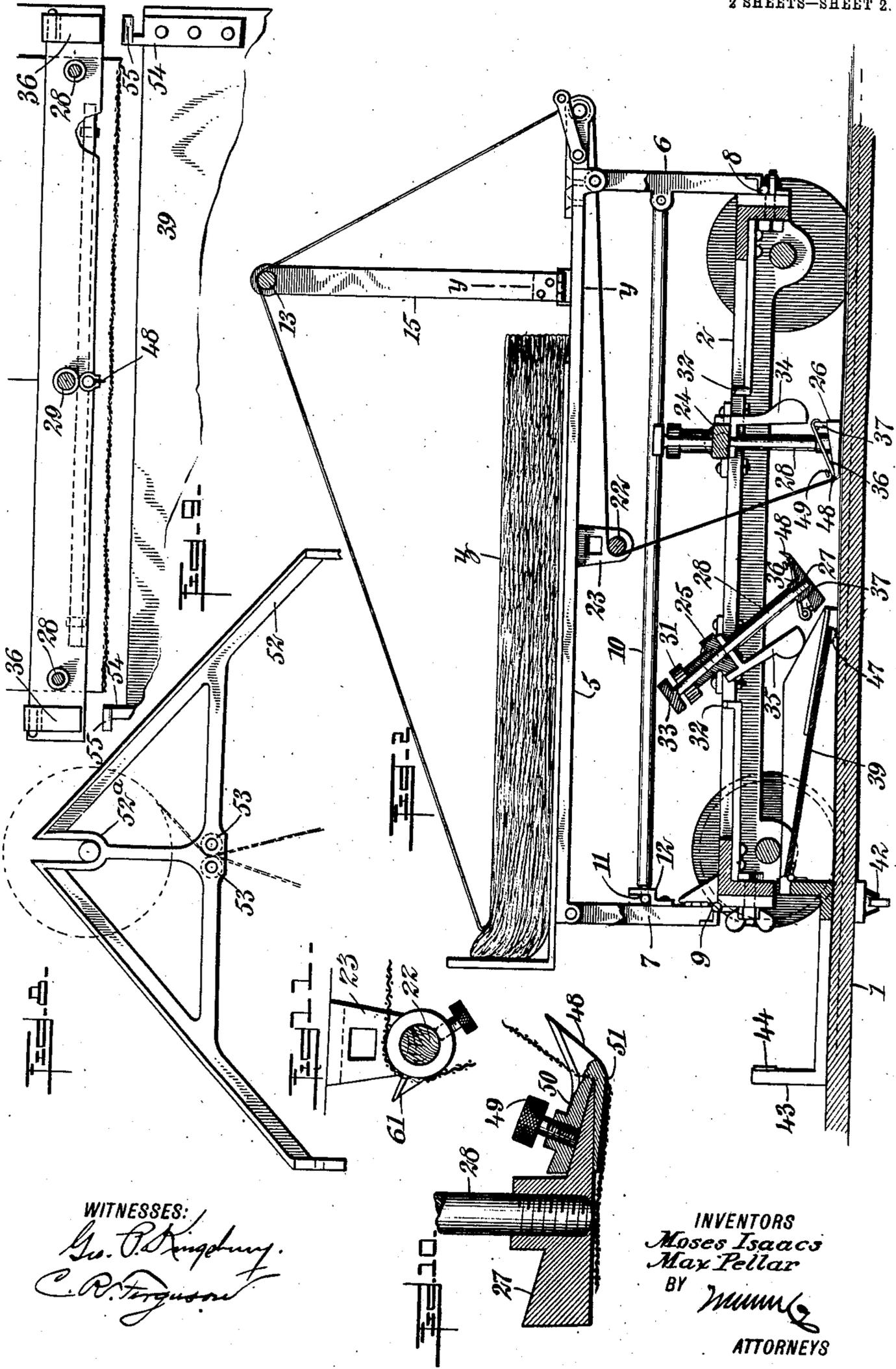
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M. ISAACS & M. PELLAR.
FABRIC FOLDING MACHINE.

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FABRIC-FOLDING MACHINE.

No. 819,548.

Specification of Letters Patent.

Patented May 1, 1906.

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To all whom it may concern:

Be it known that we, MOSES ISAACS and MAX PELLAR, both citizens of the United States, and residents of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Fabric-Folding Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in machines for folding or forming layers of fabric on a cutting-table.

It is the usual practice preparatory to cutting handkerchiefs or garments to place the goods in several layers on a cutting-table, and as the table is considerably long much time is consumed by a person walking back and forth to manually form the layers and to keep the layers straight or even one upon another.

It is the object of our invention to provide a machine of simple construction by means of which the several layers of fabric may be quickly and evenly placed.

We will describe a fabric-folding machine embodying our invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a fabric-folding machine embodying our invention. Fig. 2 is a side elevation thereof, partly in section. Fig. 3 is a detail perspective showing means for elevating the carrier-bars. Fig. 4 is a section on the line $x x$ of Fig. 3. Fig. 5 shows a recording device that may be employed. Fig. 6 is a detail showing one of the carrier-bars as lifting the gripper-plate. Fig. 7 is a section on the line $y y$ of Fig. 2. Fig. 8 shows a modification in the goods-holder. Fig. 9 is a detail plan. Fig. 10 shows a cloth-cutter, and Fig. 11 shows a modification in the cloth-cutter.

Referring to the drawings, 1 designates a cutting-table, movable along the top of which is a carriage comprising a frame 2, supported by wheels 3, which engage with tracks 4 on the table-top. These wheels 3 will preferably be provided with rubber tires. Mounted on the frame 2 is a supplemental table 5, on which the goods to be placed in layers are arranged. The table 5 is supported at one end by uprights 6 and at the other end by uprights 7. The uprights 6 are pivoted or

hinged to an end bar of the frame 2, as indicated at 8 in Fig. 2, and the other uprights 7 are also hinged to the opposite end cross-bar of the frame, as indicated at 9. The several uprights have pivotal connection with the table 5, and they are held in upright position when the machine is in operation by means of tie-rods 10, here shown as pivotally connected to the uprights 6 and having hook portions 11 for engaging in keepers 12, attached to the uprights 7. The object of this construction is to permit the table 5 to be swung downward close to the frame 2, so that a bolt of goods may be slid thereon—that is, without requiring any great manual effort to place the heavy material on the table. Of course when the table 5 is swung downward the rods 10 must be released from the keepers 12.

The goods z pass from the supplemental table over a bar or roller 13, supported by standards 14 15 on the table 5. The standard 14 has a reduced lower end for engaging in a hole formed in the table 5, and the upper end of said standard 14 is detachably connected to the roller or bar 13. The other standard 15 has a hinged connection 16 with a block 17, arranged to swing on a bolt 18, passing through the table 5. By this arrangement after lifting out the standard 14 the standards carrying the roller or bar 13 may be swung over to one side of the table and turned lengthwise thereof when the device is not in use. From the roller or bar 13 the fabric passes over a roller 19 on one end of the table 5, and engaging against the outer side of the fabric is a tension-roller 20, mounted on arms 21, having swinging connection with said table. From the roller 19 the fabric extends over a guide-roller 22, supported by hangers 23 on the under side of the table 5.

We will now describe the means for spreading the fabric upon the cutting-table as the machine moves back and forth. This means comprises a pair of rock-shafts 24 25, having bearings in boxes on the side members of the frame 2 and carried by these bars 24 25 are fabric-carrying bars 26 27, the adjacent edges of the opposite bars being somewhat sharpened—in other words, the said bars are wedge-shaped in cross-section. The bars are connected to stem portions 28, which move through openings in the rock-bars 24 25, and the central stem of each bar has a threaded portion 29, movable through a sleeve 30 on its rocking bar. These threaded

portions engage with ratchet-wheels 31, designed at the end of movement of the carriage to be engaged by fingers or pawls 32 for imparting rotary movement to the ratchet-wheels, thus drawing upward the carrier-bars to accommodate them to the growing thicknesses of material spread upon the cutting-table. The carrier-bars of each rocking bar are moved simultaneously, because the upper ends of the stems are connected by a cross-bar 33. Connected to one end of the rocking bar 24 is a downwardly-extended arm 34, having a rounded end, and a similar arm 35 extends downward from one end of the rocking bar 25, and mounted on each carrier-bar is an inclined cam-plate 36, the outer end of which is supported by a pin 37. The object of this construction will hereinafter appear.

Arranged at or near the ends of the cutting-table are fabric-clamping devices, here shown as consisting of plates 38 39, these plates being mounted to swing vertically on cross-bars 40, attached to clamping-bars 41, the ends of said bars 41 being turned downward and inward to engage over the edge of the cutting-table, as clearly indicated in the drawings, and they are held as adjusted by clamping-nuts 42, and outward of each bar 41 is an upwardly-extended arm 43, provided with a buffer 44, of rubber or other suitable material, against which the carriage may strike upon reaching the ends of the cutting-table. Arranged at one side of each clamping-plate 38 or 39 is a board 45, having an incline 46 at its upper end designed to be engaged by the depending arms 34 35, and on the under side of each clamping-plate are toothed jaw-plates 47, designed to engage with the fabric to hold the same on the cutting-table while the carriage is moving away from the clamping-plate. These toothed plates 47 are preferably semicircular, as indicated in Fig. 2, so as to insure the engagement of the teeth with the fabric as the thickness of the layers increases.

In connection with the carrier-bars we may employ one or more cutters for slitting the goods lengthwise as the carriage moves along. These cutters, as clearly indicated in Fig. 10, consist of upwardly-curved blades 48, sharpened on their upper edge and secured as adjusted on the carrier-bars by clamping-screws 49, which pass through upper plates 50 and engage with the carrier-bars. The cutting-blades are also provided with bottom plates 51 for engaging against the under side of the carrier-bars.

Instead of placing the goods flatwise on a table, such as the table 5, we may employ when the goods are in a roll a frame consisting of arms 52, designed to be engaged with the frame 2, and of course at such time the supplemental table with its supporting devices will be removed. These arms 52 are

provided with bearings 52^a for rollers on which the goods or fabric may be wound, and the fabric will pass over guide-rollers 53, supported by cross-bars on the frame or arms 52.

Extended forward from each clamping-plate 38 39 are fingers 54, having outwardly-extended portions 55, designed to engage upon the inclines 36.

In the operation, assuming the carriage to be moving from the right-hand end of the cutting-table toward the left-hand end, the goods or fabric will be clamped by the plate 38, and as the layer engages underneath the carrier-bar 26 it will be evenly spread upon the table, and the blade 48, mounted on said bar 26, will sever the fabric longitudinally. When the machine reaches the left-hand end of the cutting-table, the arm 35, depending from the rocking bar 25, will engage upon the incline 46, swinging the carrier-bar 27 upward and engaging its ratchet-wheel 31 with the finger 32, thus imparting a rotary movement to the ratchet-wheel and drawing the bar slightly upward. As the carriage continues the inclined plates 36 on the bar 26 will pass into engagement or against the under sides of the finger portions 55, swinging the plate 39 upward, permitting the fabric to be carried underneath the plate by means of the said bar 26. When the finger portions 55 pass over the higher ends of the plates 36, the plate 39 will swing downward to engage the clutching devices 47 with the goods preparatory to the return movement of the carriage. Upon the return movement the fabric of course will be engaged by the carrier-bar 27 and the parts will be reversed, as above mentioned, at the right-hand end of the table.

As a means for indicating the number of yards or the number of layers of fabric placed upon the cutting-table, we may mount upon the carriage a recording device 56 of any suitable construction and from the working parts of which arms 57 58 extend outward in opposite directions, these arms being designed for engagement with pins 59 60 on the rocking bars 24 25. These pins not only serve to operate the rocking device, but by engaging with the side members of the frame 2 limit the rocking motion of the rocking bars. In other words, they would serve to hold said rock-bars in such position as to support the bars 26 27 in contact with the fabric.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a fabric-folding machine, a table, a carriage movable along the table, carrier-bars supported by the carriage, and means for automatically shifting the carrier-bars upward.
2. In a fabric-folding machine, a table, a wheel-mounted carriage mounted on the table, rocking bars on the carriage, carrier-bars supported by the rocking bars and automatic means for shifting said carrier-bars.

3. In a fabric-folding machine, a wheel-mounted carriage, fabric-engaging devices on the carriage, swinging uprights on the carriage, a table having pivotal connection with said uprights, and means for holding the uprights in vertical position.

4. In a fabric-folding machine, a table, a carriage movable on the table, fabric-engaging devices on the carriage, uprights having swinging connection with the carriage, a table pivotally connected to the uprights, standards on the table, a roller supported by the standards, a roller at one end of the table, and a tension-roller coacting with the last-named roller.

5. In a fabric-folding machine, a table, a carriage movable on the table, fabric-clamping devices at the ends of the table and mounted to swing vertically, carrier-bars mounted on the carriage, and devices on the carrier-bars for swinging the clamping-plates upward.

6. A fabric-folding machine comprising a table, a carriage movable on the table, rocking bars on the carriage, carrier-bars supported by the rocking bars, arms extended downward from the rocking bars, clamping-plates mounted to swing at the ends of the table, and inclined surfaces adjacent to said clamping-plates for engaging with said arms.

7. In a fabric-folding machine, a table, a carriage movable on the table, rocking bars on the carriage, carrier-bars, stems extended upward from the carrier-bars through the rocking bars, connections between the several stems of each set, one of the stems of each set being threaded, an interiorly-threaded ratchet-wheel engaging with each threaded stem, and means for rotating the ratchet-wheel as the carriage approaches its extreme positions.

8. In a fabric-folding machine, a table, a carriage movable on the table, carrier-bars having swinging connection with the carriage, and cutting-blades detachably connected to the carrier-bars.

9. In a fabric-folding machine, a table, a carriage movable on the table, fabric-engag-

ing devices on the carriage, a table on the carriage, uprights on said last-named table, one of the uprights having detachable connection with the table, the other of said uprights having swinging and rotary connection with the table, and a roller supported by the uprights.

10. In a fabric-folding machine, a table, a carriage movable on the table, carrier-bars having swinging connection with the carriage, cam-plates on said bars, vertically-swinging clamping-plates at the ends of the table, and fingers on said swinging plates for engaging with the cam-plates on the carrier-bars.

11. In a fabric-folding machine, a table, fabric-clamping devices mounted to swing at the ends of the table, a carriage movable on the table, carrier-bars mounted to swing on the carriage, devices on the carrier-bars for swinging the said clamping-plates upward, a table on the carriage for supporting the fabric, and a guide-roller at the under side of said table supported by the carriage over which the fabric passes to the carrier-bars.

12. In a fabric-folding machine, a table, a carriage movable on the table, rock-bars supported by the carriage, carrier-bars mounted on the rock-bars, arms depending from the rock-bars and having cam-shaped ends, fabric-clamping devices at the ends of the table, and inclines adjacent to said clamping devices and adapted to be engaged by the cam-shaped ends of the arms to rock the rocking bars.

13. In a fabric-folding machine, a table, a carriage movable on the table, rocking bars on the carriage, carrier-bars supported by the rocking bars, pins extended from the rocking bars, a recording device on the carriage, and actuating devices for the recording device operated by said pins.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

MOSES ISAACS.
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Witnesses:

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