M. ISAACS.

CLOTH LAYING MACHINE.

APPLICATION FILED OCT. 8, 1918.

1,338,570.

Patented Apr. 27, 1920.

2 SHEETS—SHEET 1.

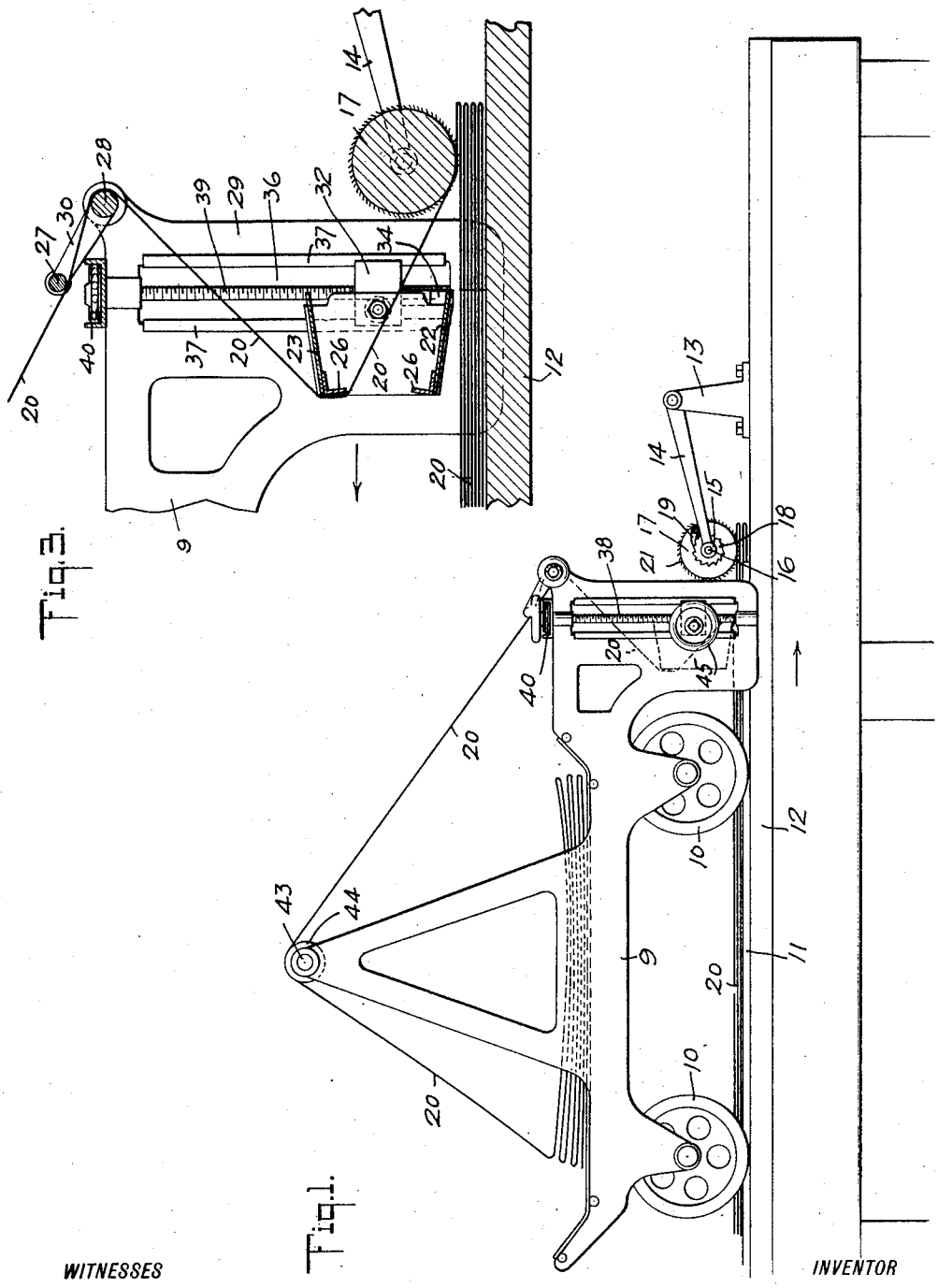


Fig. 1.

Fig. 3.

WITNESSES

Frederick Diehl.

INVENTOR

Moses Isaacs

BY Munn & Co

ATTORNEYS

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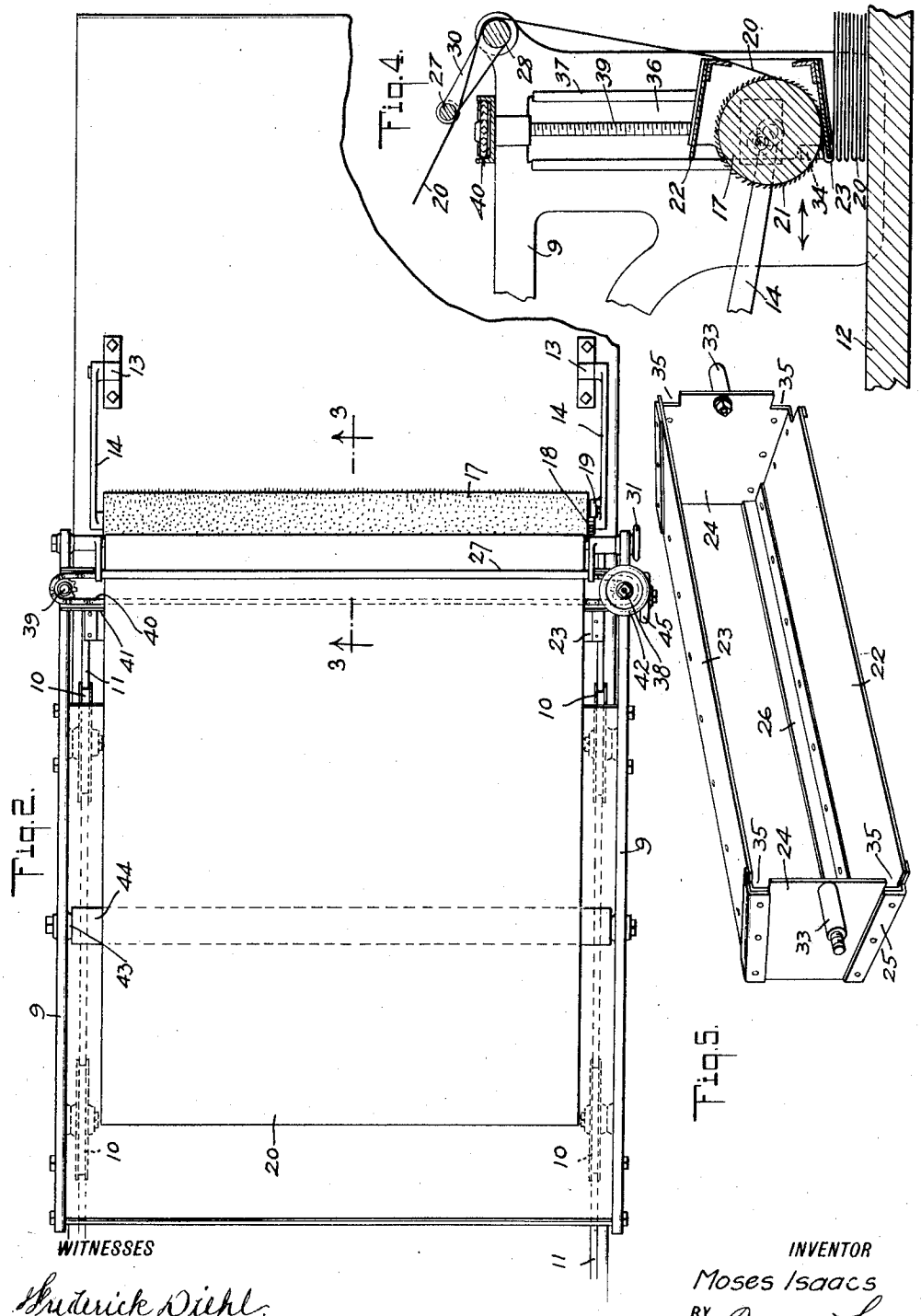


Fig. 2.

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

MOSES ISAACS, OF NEW YORK, N. Y.

CLOTH-LAYING MACHINE.

1,338,570. Specification of Letters Patent. Patented Apr. 27, 1920.

Application filed October 8, 1918. Serial No. 257,362.

To all whom it may concern:

Be it known that I, MOSES ISAACS, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Cloth-Laying Machine, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to simplify the operation of the machine; to reduce the cost of construction of the machine; and to insure accuracy in the delivery of cloth from the machine when piling the same on a cutting table.

Drawings.

Figure 1 is a side elevation of a cutting table, a machine for laying cloth constructed and arranged in accordance with the present invention, and a fragment of a pile in the process of being set or laid with a detent mechanism for holding the cloth at one end of said pile;

Fig. 2 is a top plan view of the same;

Fig. 3 is a detail view on an enlarged scale, showing in section, a fragment of the table, a portion of the machine, and a portion of the detent, the section being taken as on the line 3—3 in Fig. 2;

Fig. 4 is a similar view showing the spread plates and frame formed thereby in the reverse position and as delivering the cloth under the detent roller at the relatively opposite end of the cutting table;

Fig. 5 is a detail view in perspective, showing the delivery frame for delivering the cloth for the detents at the opposite ends of the pile.

Description.

Machines of the character shown in the accompanying drawings are employed principally for piling cloth on the cutting tables in factories. These tables provide a piling space often fifty, sixty, or more feet in length, and whole pieces or rolls of cloth are spread or piled preparatory to marking and cutting.

The present machine is used in a manner similar to that shown in United States Letters Patent No. 819,548, for cloth laying machines, granted to me on the 1st day of May, 1906.

As seen in the accompanying drawings, a carriage 9 is provided with carrying wheels 10, which are guided to move over tracks 11 disposed adjacent the opposite edges of the cutting table 12. Mounted on the table 12, adjacent the opposite ends of the tracks 11, are standards 13, to which are pivotally connected the swinging arms 14 having bearings 15 for a shaft 16 on which the detent roller 17 is mounted. The roller 17 extends across the table 12, and adjacent the ends of the tracks 11, to which the said roller is disposed in substantially perpendicular relation. The roller is suitably weighted and is enveloped by a cover having inclined brush-like tufts, such as are found on nap-raising machines. The tufts or papillæ are inclined in the direction of rotation of the roller 17. The roller in service moves in one direction only. To prevent the roller from rotating in the reverse direction, it is provided with a ratchet wheel 18, the teeth whereof are engaged by a pawl 19 mounted on one of the arms 14, as seen best in Fig. 2 of the drawings. The pawl and ratchet are constructed and arranged so that the under portion of the periphery of the roller moves toward the standards 13, or toward the ends of the lay of cloth 20. This arrangement is employed to retain the cloth when the same is delivered under the roller 17 at the ends of the lay. The retractive pull of the cloth after having been delivered under said roller is restrained or rendered non-effective by the tufts 21 engaging the cloth.

The cloth is extended under the roller 17 by the thin delivery plates 22 and 23, respectively, and at the opposite ends of the lay of cloth 20. The plates 22 and 23 are held in position by the side members 24, said sides and plates being structurally united by angle or corner irons 25 and 26. The irons 26 form sliding surfaces at the back of the frame and at the rear edges of the plates 22 and 23, said surfaces avoiding imposing a frictional hold on the cloth 20.

As shown best in Fig. 3 of the drawings, the cloth 20 is extended between the tension bars 27 and 28, the latter having bearings in the extended frame 29 of the carriage 9. The bars 27 and 28 are structurally connected by the link arms 30. The angular arrangement of the bars 27 and 28 is determined by rotating the bars 28, which is manually accomplished by rotating the hand wheel 31 at the side of the machine.

From the bar 28, the cloth 20 is passed between the plates 22 and 23 and between the irons 26. The plates 22 and 23 are rearwardly inclined to the irons 26 and in service present only the delivery edge of said plates in juxtaposed relation to the lay of cloth 20. The frame formed by the plates 22 and 23, and sides 24, is pivotally mounted on bearing blocks 32, and by means of the trunnions 33 extended outward from the sides 24 for mounting in bearings formed in said blocks 32. The trunnions 33, as seen best in Fig. 4 of the drawings, are mounted adjacent the forward or flared edge of the frame. The frame is partially supported by stop blocks 34, the same being extensions of the blocks 32.

As shown best in Fig. 4 of the drawings, the frame or the plates 22 and 23, and sides 24 thereof, are cut away to form recesses 35, within which the said blocks 34 rest when the frame is extended horizontally in either direction relative to the extended frame 29. The bearing blocks 32 are slidably mounted in the sides of the frame 29 and in the vertical openings 36 therein. The edges of the blocks 32 are preferably grooved to engage tracks 37, forming the edges of said openings 36. The blocks 32 are elevated and depressed in the openings 36 by means of feed screws 38 and 39, said screws being provided with a screw thread to engage tapped perforations in the blocks 33. Simultaneous and uniform rotation of the screws 38 and 39 is secured by operatively connecting the same by a sprocket chain 40, to support which a channel 41 is attached to and extended between the sides of the frame 29. The screw 38 has a hand wheel 42, by which it is rotated, a similar rotation being transmitted to the screw 39 by the chain 40. The cloth distributed by the machine may be arranged in folds on the platform of the carriage 9, as shown in Fig. 1 of the drawings, or may be mounted rotatatively on the shaft 43. In the latter event, the cloth 20 is not guided by the idler 44, which is employed only when the cloth is disposed on the carriage in the folded condition.

The operation of the machine is as follows: The cloth 20 is folded over the idler 44, between the bars 27 and 28, between the framing irons 26 and the plates 22 and 23, and the end is disposed under the roller 17 on the right-hand end of the lay, the same being lifted manually to introduce the said end. The operator by means of the hand wheel 45 then adjusts the frame and plates 22 and 23, so that said frame and plates extend toward the left, or the direction in which the carriage 9 is first to be moved, or so that the flare of the plates 22 and 23 is toward the similar roller 17 at the left end of the cloth lay to which the carriage is being moved. The blocks 32 are adjusted vertically so that the delivery edge of the lower plate is just above the table and in position to raise the roller 17 by wedging under it, the said plates 22 and 23 being sufficiently separated to admit the roller 17 therebetween.

The machine is then moved in the reverse direction, the plate 22 or 23 passing out of engagement with the folded edge of the cloth held by the papillæ 21 under the roller 17. When the plate 22 or 23 is clear of the roller 17, the operator reverses the said frame by rotating it on the trunnions 33 until the recesses 35 rest on the opposite sides of the blocks 34. The carriage is then moved to the opposite end of the lay where the operation above described is repeated in conjunction with the second roller 17.

During the operation of laying the cloth on the table 12, the operator from time to time adjusts upward the height of the blocks 32 to secure the approved position of the blade 22 or 23, so that it be slightly above the pile of cloth laid, and low enough to lift the roller 17.

Claims.

1. A machine as characterized comprising a table; a carriage movable thereon; a plurality of detent rollers, said rollers being rotatable in one direction only; means provided on said rollers permitting the introduction of cloth thereunder and for preventing the withdrawal of the same; means for carrying a supply of cloth on said carriage; means for spreading said cloth on said table, said means embodying a rocking frame embodying spreading plates, said plates being held in spaced relation to permit the introduction of said detent rollers therebetween, and the forward edges of said plates being contracted for wedging under said rollers; means manually operable for reversing the working position of said plates; and means manually operable for regulating the working height of said plates.

2. A machine as characterized comprising a table; a carriage movable thereon; a plurality of detent rollers, said rollers being rotatable in one direction only; means provided on said rollers permitting the introduction of cloth thereunder and for preventing the withdrawal of the same; means for carrying a supply of cloth on said carriage; means for spreading said cloth on said table, said means embodying a rocking frame embodying spreading plates, said plates being held in spaced relation to permit the introduction of said detent rollers therebetween, and the forward edges of said plates being contracted for wedging under said rollers; means manually operable for reversing the working position of said plates; and means manually operable for regulating the working height of said plates,

said means embodying a plurality of journal boxes supporting said plates and feed screws for elevating and depressing said boxes.

3. A machine as characterized comprising a table; a carriage movably mounted thereon; an extension frame mounted on said carriage, said frame having vertically extended guide slots; a plurality of bearing blocks mounted in said slots; means for elevating and lowering said blocks in unison; and a spreading frame pivotally mounted on said blocks to assume a forwardly and a rearwardly extended position relative thereto, said frame embodying two spreading plates, and supporting sides therefor, said plates being disposed in a slightly angular relation; and means manually controlled for rocking said frame.

MOSES ISAACS.