March 31, 1925.

1,531,313

M. L. SHAPERA

CLOTH PILING MACHINE

Filed Sept. 11, 1922

5 Sheets-Sheet 1

Fig. 17.

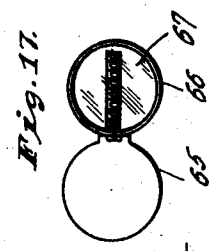
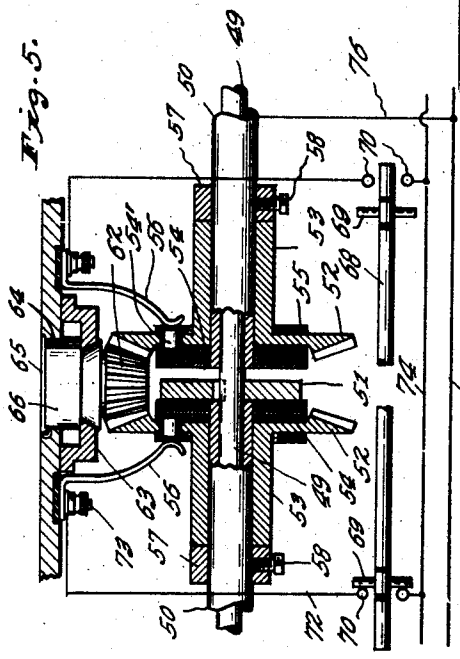


Fig. 1.

Fig. 5.



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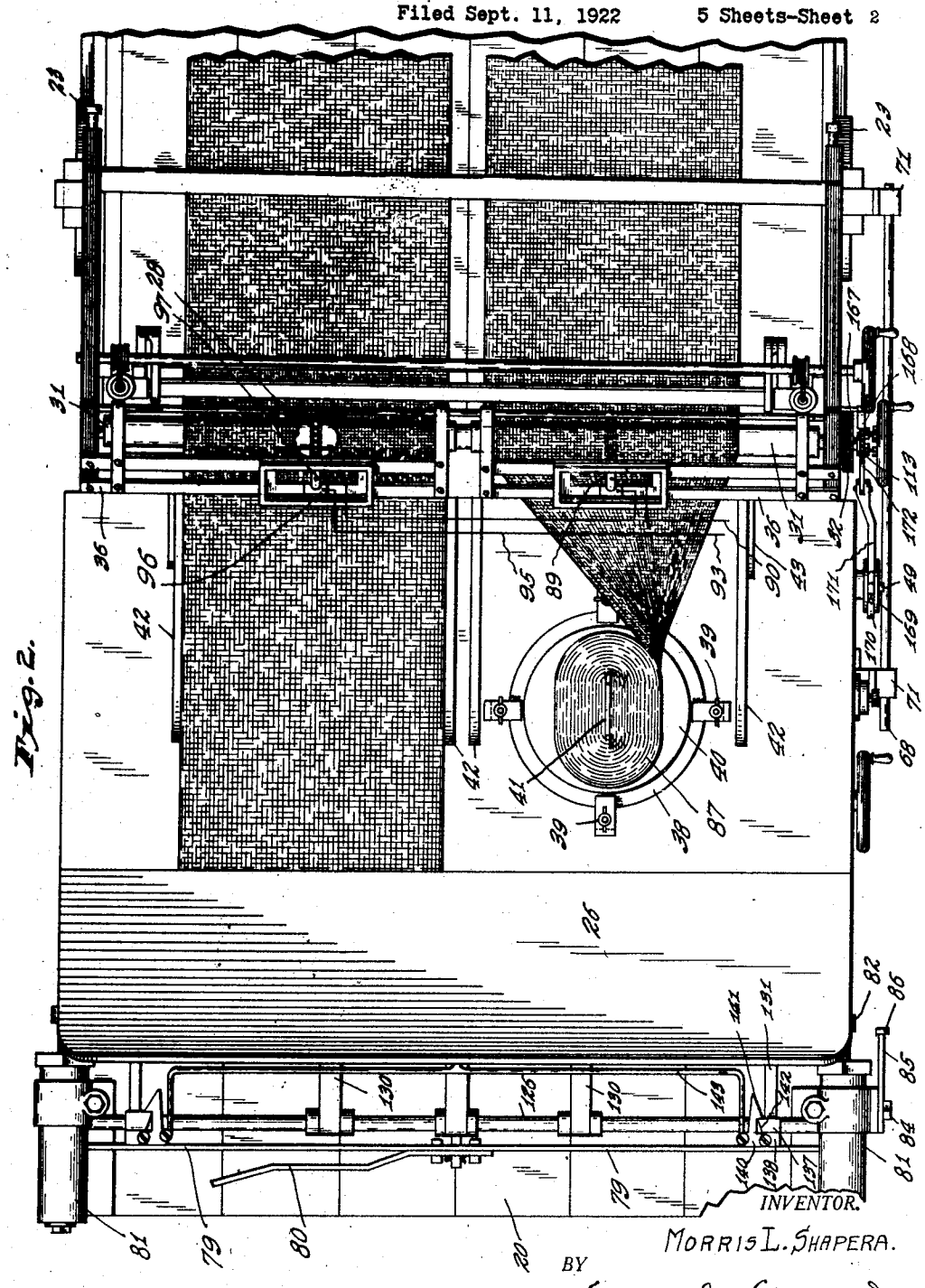


Fig. 2.

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CLOTH PILING MACHINE

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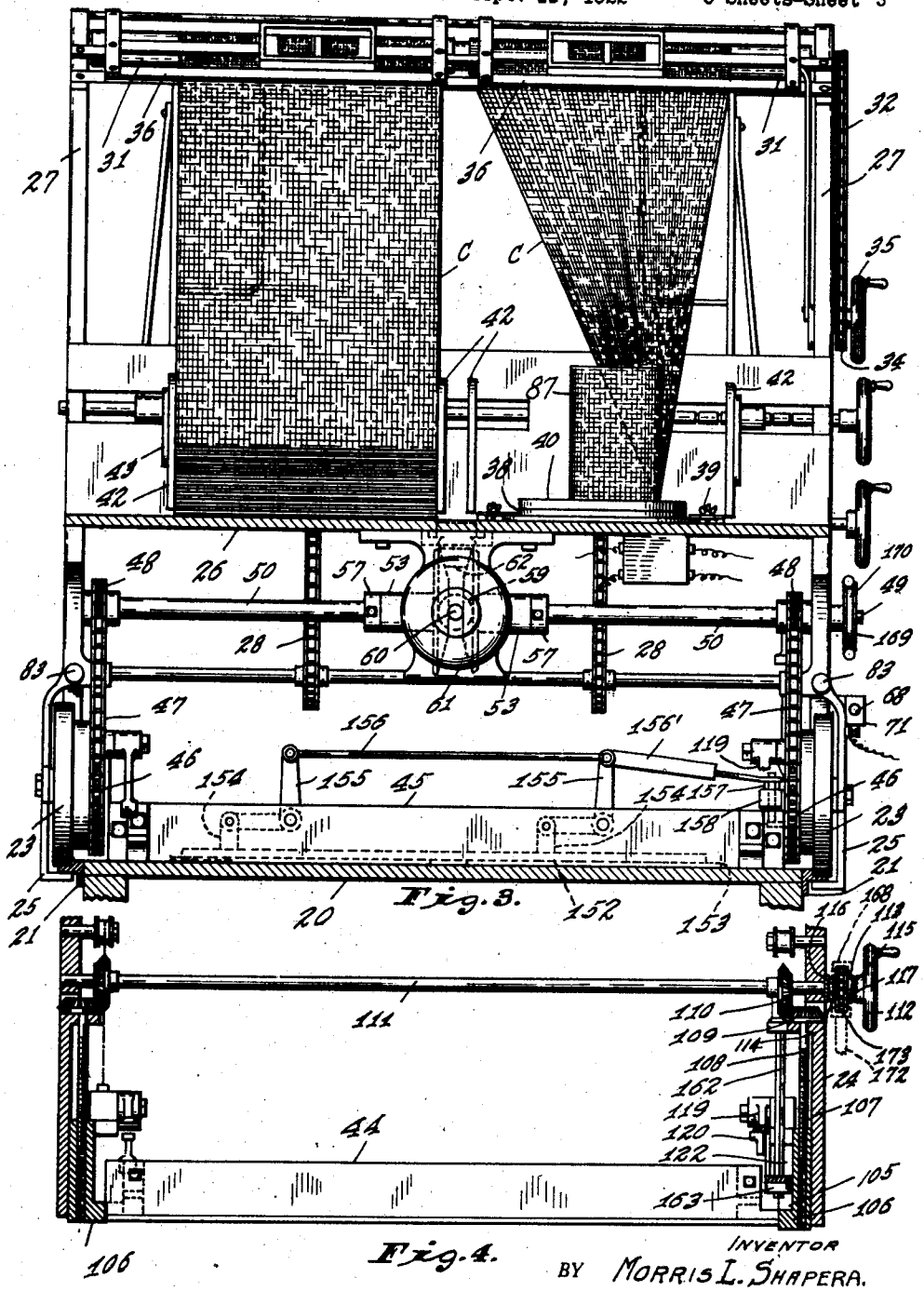


Fig. 3.

Fig. 4.

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CLOTH PILING MACHINE

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Fig. 6.

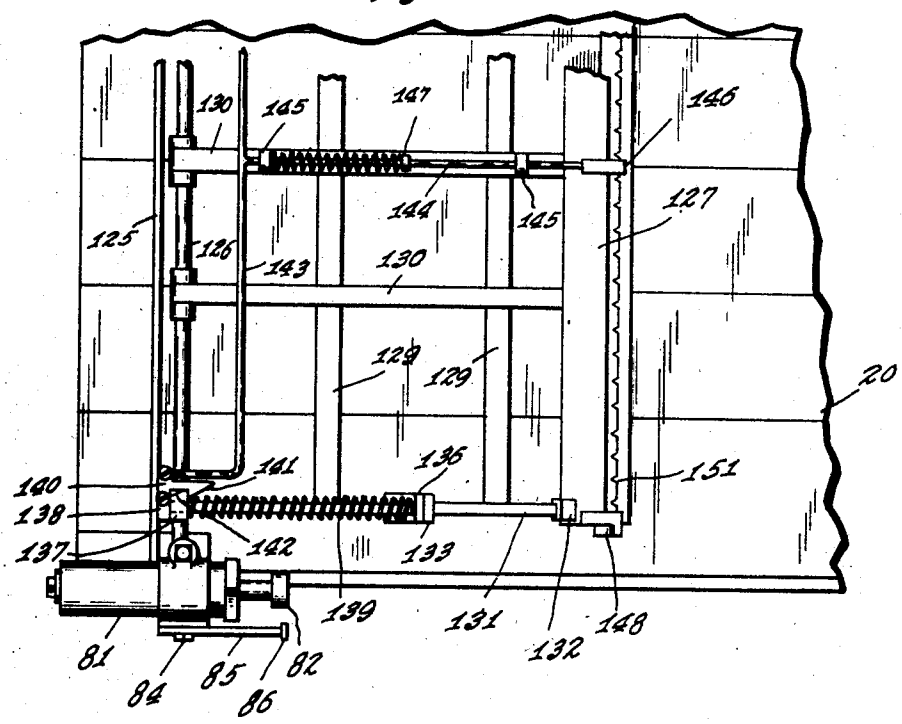


Fig. 7.

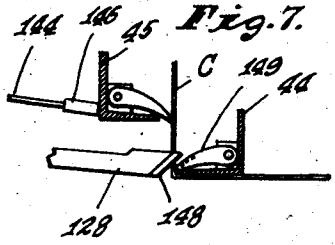


Fig. 8.

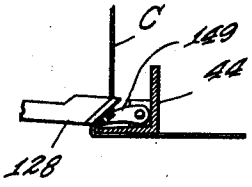


Fig. 10.

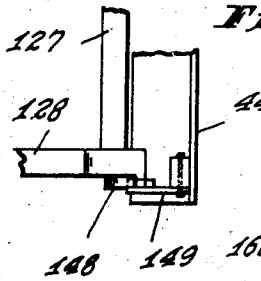


Fig. 11.

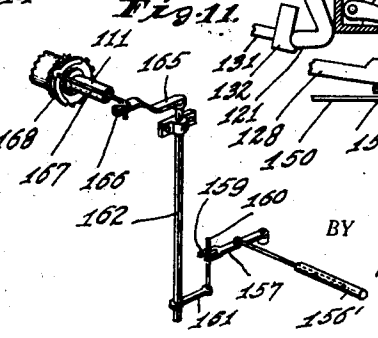
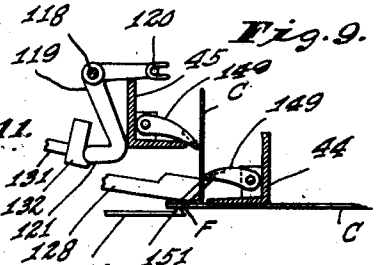


Fig. 9.



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CLOTH PILING MACHINE

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Fig. 12.

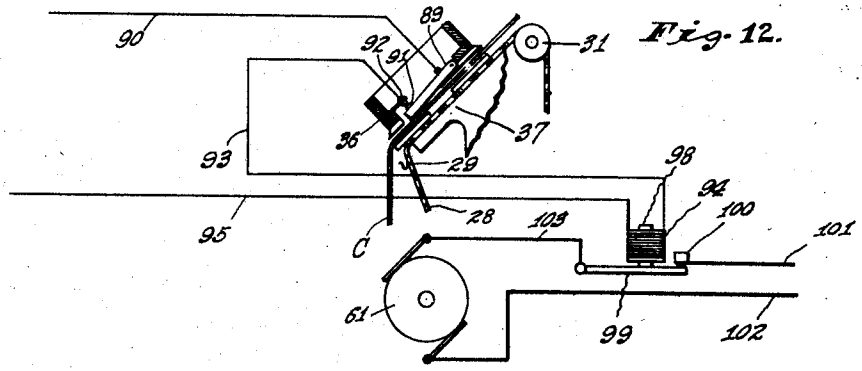


Fig. 14.

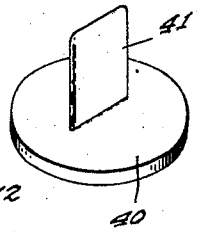


Fig. 16.

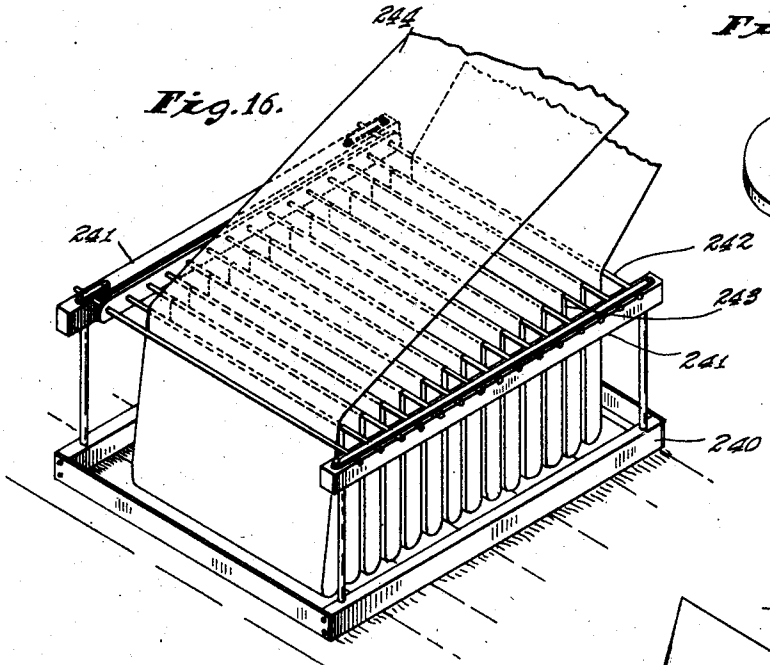


Fig. 15.

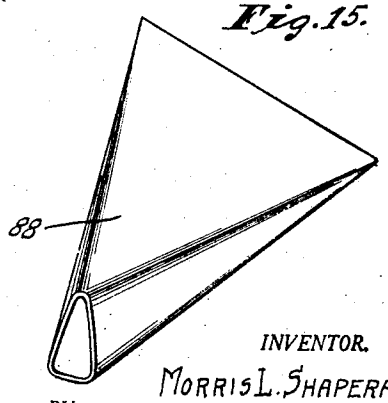
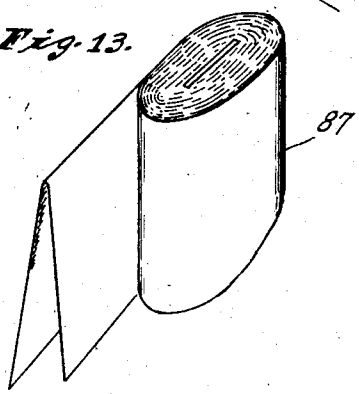


Fig. 13.



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Patented Mar. 31, 1925. 1,531,313

UNITED STATES PATENT OFFICE.

MORRIS L. SHAPERA, OF MUNCIE, INDIANA.

CLOTH-PILING MACHINE.

Application filed September 11, 1922. Serial No. 587,420.

To all whom it may concern:

Be it known that I, MORRIS L. SHAPERA, a citizen of the United States, and a resident of Muncie, county of Delaware, and State of Indiana, have invented a certain new and useful Cloth-Piling Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to improvements in cloth folding machines such as illustrated and described in the prior Patents No. 964,124, 1,002,459, 1,067,379 and 1,131,647 dated July 12, 1910, September 5, 1911, July 5, 1913 and March 9, 1915 respectively.

The chief object of the present invention is to adapt a cloth folding machine of the character hereinbefore indicated so that the same can simultaneously pile or fold a plurality of piles of cloth side by side.

Another object of the invention is to provide such a plural cloth piling machine with a control system whereby exhaustion of any one of the cloth strips will automatically stop the entire machine from piling or folding cloth.

A third object of the invention is the provision of a measuring device which is so associated with the machine that tampering or removal from the machine is exceptionally difficult and at the same time removal from the machine of the measuring device simultaneously disconnects several elements of the machine so that the machine cannot be operated to pile cloth.

Another and general object of the machine is to improve the same in several particulars.

The chief features of the invention consist in the means substantially as herein set forth for the accomplishment of the foregoing objects, and in addition thereto the provision of an electrical reversing mechanism, a unification of a plural releasing mechanism and a detachable construction whereby the machine may be adapted to receive any form of cloth, bundle, bolt of winding, and pile the same in the general manner described in the aforesaid Letters Patents.

The full nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Fig. 1 is a side elevational view of a cloth piling machine embodying the features of the invention. Fig. 2 is a top plan view of the machine shown in Fig. 1. Fig. 3 is a transverse sectional view of the machine. Fig. 4 is a similar sectional view of the lower portion of the machine and in a plane other than that shown in Fig. 3. Fig. 5 is a sectional view of the reversible power connections and a diagrammatic view of a portion of the machine showing a simplified construction embodied therein. Fig. 6 is a plan view of the bumper construction. Figs. 7, 8 and 9 are sectional views of the cloth folding parts, Fig. 7 illustrating the parts at the start of the fold. Fig. 8 illustrates the parts shortly thereafter. Fig. 9 illustrates the parts with the completed fold. Fig. 10 is a top plan view of the parts shown in Figs. 7, 8 and 9. Fig. 11 is a perspective view of a power connection. Fig. 12 is a sectional view of a portion of the power controlled system and a diagrammatic view of the electrical control and power supply. Fig. 13 is a perspective view of one form of folded bolt of cloth. Fig. 14 is a perspective view of the supporting plate therefor. Fig. 15 is a perspective view of a spreading shoe associated with the folded bolt shown in Fig. 13 for spreading the folded bolt prior to piling. Fig. 16 is a perspective view of a modified form of cloth supporting base with a modified form of cloth bundle. Fig. 17 is a top plan view of a measuring device incorporated as a unit within the machine.

The general form of the machine illustrated herein is substantially similar to that illustrated and described in the prior patents hereinbefore mentioned. In brief, the operation is as follows. A carriage is associated with a table and reciprocates back and forth thereon. In said reciprocation suitable mechanism conveys and manipulates a strip of cloth from a bolt or bundle in such a manner that the cloth is deposited and folded upon the table in piles. Suitable mechanism is associated with the propelling means upon the carriage so that the travel of the carriage is automatically reversed at the end of the desired travel limit. Likewise the operation of the propelling

means is automatically stopped upon the failure or exhaustion of the cloth supply. The machine also is not only provided with suitable means for measuring the number of reciprocations of said machine, but is also adapted to measure the total period that the machine is operated.

In the drawings there is shown a table 20 having the tracks 21 with the groove 22. The grooves 22 are adapted to receive the wheels 23 of a cloth piling carriage indicated generally by the numeral 24 in Fig. 1. Associated with the carriage 24 are the guide plates 25 which retain the carriage upon the table 20. The carriage 24 is provided with a base 26 adapted to receive bolts or bundles of cloth. The frame 24 is extended upwardly at 27 and a conveyer chain 28, provided with suitable cloth engaging hooks 29, is associated with a pair of guide wheels 31. One of said guide wheels 31 is actuated by a sprocket chain 32, associated with a sprocket wheel 33. The sprocket chain 32 is associated with a sprocket wheel 34 in turn rotated by a hand wheel 35. Cloth is associated with the hook 29 and is carried through the supporting plates or jaws 36 and 37 and thereafter pass downwardly towards the table. The particular construction and operation of this mechanism is described in the last mentioned prior patent. Positioned upon the base 26 of the carriage 24 is a plate 38 which may be readily secured to said base by suitable means such as that indicated at 39, see Fig. 1. Associated with the detachable members 39 is a tongued supporting plate 40 having the tongue 41. Also associated with the frame 24 are the guide plates 42 supported by the brackets 43 in turn adjustably supported by the upward extension 27.

After the cloth has been manually fed through the jaws of the machine, the cloth is passed through the feet, herein shown in the form of oppositely positioned angle irons 44 and 45, see Figs. 1 and 2. By said feet said cloth is folded and piled. The means for reciprocating the carriage upon the table to form piles includes the sprocket wheels 46 associated with two opposite wheels 23. Associated with each sprocket wheel 46 is a sprocket chain 47, see Figs. 1 and 3, and said chains are driven by the sprocket pinions 48 upon a shaft 49. The shaft 49 has a splined connection with each of said sprocket pinions 48. The shaft 49 is rotatably supported by a pair of sleeves 50 which are aligned and have their adjacent ends spaced apart so as to permit the shaft 49 to carry an armature member 51. A pair of bevel gears 52 are rotatably supported upon the sleeves 50 and each is provided with a hub 53. The face of each sprocket gear is provided with an electromagnet 54 which has one terminal associated with the sleeve 50 and the other terminal 54′ connected to a terminal ring 55. The ring 55 is engageable by a spring clip or finger 56 stationarily supported upon the base 26 of the carriage. Said finger, of course, is insulated from said base. A collar 57 is rigidly secured in adjusted position upon the sleeve 50 by means of the set screw 58. In this manner, longitudinal movement of the electromagnet and the gear 52 upon the supporting sleeve 50 is prevented. The construction hereinbefore described is duplicated for the bevel gear 53. The inward movement of said gears is prevented by a driving pinion 59, see Fig. 3, upon a shaft 60 of an electric motor 61.

Also associated with said bevel gears 52 and 53 and maintaining the same in spaced relation with each other is a bevel pinion 62 which is rotatably mounted in the frame forming member 63, suitably but rigidly secured to the under surface of the table 26. The table 26 is apertured at 64 to receive a cover 65 with a casing 66, see Figs. 1, 5 and 17. The frame 63 supports the revolution counter 67 contained within the casing 65. From Fig. 1 it will be noted that it is necessary to dismantle the entire driving connection in order to gain access to the revolving counter actuator to permit its removal or tampering therewith.

The means for reversing the rotation of the shaft 49 includes a bar 68 which is slidably supported upon the carriage frame 24. The bar is reciprocated at or near the end of the reciprocatory movement of the carriage. The bar carries a pair of switch members 69 which preferably are insulated from said bar and are insulated from each other. Each switch member, which comprises the pin or disk 69 is adapted to engage two separated terminals 70 and close a circuit across the same. The terminals 70 are indicated in Figs. 1 and 5 and the switch member 69 is positioned within the housing 71. A current conductor 72 connects one switch terminal 70 with a terminal 73 associated with and connected to the spring finger 56. The other terminal 70 of each switch is connected to a line 74 which leads to a source of current. Another line 75 also leads to the source of current and connects by means of the line 76 to the stationary sleeve 50 and by this connection to each of the grounded ends of the electromagnets 54. Thus, when the carriage has traversed to the right a sufficient distance, the rod 68 is engaged and actuated so as to close, as shown in Fig. 5, the left hand switch 69—70. This energizes the left hand electromagnet 54 which attracts the armature 51 and holds the same. Since said armature and said electromagnet are provided with suitable friction faces, the shaft 49 rotates

with the bevel gear 53 to drive the carriage towards the right, see Fig. 1, until such time as the carriage has reached the end of its movement in the right hand direction, whereupon the rod 68 is again and reversely actuated to open the switch previously closed, and close the switch previously opened and thereby energize the opposite magnet 54 so as to cause the armature 51 to rotate with said magnet which is rotated by the bevel gear 52. Thus the shaft 49 is alternately reversely rotated so that the carriage may be reciprocated.

At each end of the table 20 there is provided an abutment or bumper frame construction 77 which is adjustably positioned upon the table 20 and rigidly secured thereto by a clamping construction 78 operated by a plurality of rods 79 controlled by a lever 80, see Figs. 1 and 2. The aforesaid construction and operation is also described in the last mentioned prior patent. The abutment frame 77 carries a shock absorber cylinder 81 which supports a bumper member 82 engageable by the projecting portion 83 upon the carriage 24. The shock absorber construction hereinbefore referred to is likewise described in the prior patent and it may suffice to state that said construction cushions the advancing movement of the carriage and stores up in a cushioning spring the power thereof. After the machine has stopped advancing, the cushion spring returns said power to the machine and starts the carriage upon its return movement. The frame 77 adjustably and yieldingly supports, by the means 84 a bracket 85 carrying the abutment 86 for engaging the rod 68 to actuate the electromagnetic reversing mechanism.

Reference will now be had to Figs. 1, 2 and 3 wherein the machine is illustrated as adapted to simultaneously pile two piles of cloth from similar or dissimilar cloth bolts or bundles. As shown clearly in Figs. 2 and 3 the left hand cloth or bundle is threaded or piled in layers. The right hand bolt is shown clearly in Fig. 13 and in said figure it will be noted that in addition to being formed in a coil, the cloth is folded along a longitudinal median line so as to be, when in folded form, one half the width of the true width of the strip. The base 40 see Fig. 14 having the tongue 41 is adapted to receive and support the folded and coil bolt 87. Associated with the bolt 87 is a spreading foot 88 see Fig. 15 suitably supported by the members 89, see Fig. 1, upon the framework of the carriage. The member 88 is provided with an increasing triangular top and decreasing triangular sides. Thus, the two sides of the flat bolt 87 are supported by the member 88 and said sides are gradually brought to the same level by said spreading member until said sides are at the same level, whereupon the level cloth is received by the jaws 36 and 37.

As described clearly in the foregoing paragraphs, the machine is adapted to simultaneously pile several piles of cloth, herein the machine being adapted to pile but two, although the machine may be extended by widening the same. Or a sufficiently large machine provided with a plurality of feeding chains 28 may pile several similar widths of cloth. However, herein there is illustrated a machine particularly adapted to pile cloth of a relatively uniform width, each pile of cloth being controlled by suitable means. Said means includes a switch member 89 pivotally supported upon the jaw 36 and connected to a current carrying conductor 90. The switch member 89 carries a terminal 91 which engages another terminal 92 stationarily supported upon the jaw 36. The two contacts 91 and 92 are in engagement with each other only when the cloth passes through the jaws 36 and 37. Upon the exhaustion of the cloth the pivotally supported switch member 89 falls towards the jaw 37 and opens the circuit through the switch. A line 93 connects with a relay 94. A line 95 connects said relay 94 with a switch contact 96, substantially the same as the contact 92. A switch member 97 substantially similar to the switch member 89, is connected to current carrying conductor 90, and thus said switches are in series with each other and the lines 90 and 93 are connected to the relay 94, and in said circuit there is included a source of electrical energy. The relay 94 actuates an armature 98 which swings and maintains a pivoted switch member 99 into and in engagement with the contact 100. The contact 100 includes a power line 101 and the line 102 connects to one terminal of the motor 61. The other terminal connects by the line 103 with the pivotally supported switch member 99. So long as electric current passes through the series circuit controlling the relay 94, the switch member 99 will be maintained in the closed circuit position to supply current to the motor 61 and thereby reversely rotate the shaft 49 in the manner hereinbefore described.

Positioned beneath the platform 26, it will be remembered, is a pair of oppositely positioned angle iron feet 44 and 45. Said feet are slidably supported in the grooves 105 (shown dotted in Fig. 1) in a pair of oppositely positioned guide blocks 106. Since the support at each end of an angle foot is substantially the same for both feet, a description of one will suffice for them both. Each of the guide blocks 106 is slidably supported in a slot 107 in the side frame 24 of the machine. Each guide block 106 has a threaded connection with a screw bolt 108 which screw terminates in a bevel gear 109

meshing with a bevel gear 110. The bevel gears 110 are fixed upon the shaft 111 which carries a hand wheel 112. Loosely mounted upon the shaft 111 is a gear wheel 113 having oppositely disposed clutch faces 114 and 115 respectively, The shaft 111 carries complementary clutch facings 116 and 117 for alternate engagement with the clutch facings 114 and 115 so that the shaft 111 may be rotated by suitable means associated with the gear 113 or by the hand wheel 112. Rotation of the shaft 111 thus serves to elevate or lower the side guide blocks 106 which slidably support the angle feet 44 and 45.

The guide blocks 106 pivotally support at 118 oppositely positioned bell crank levers 119 having one end slotted to receive a pin 120 and the other end terminating in a forwardly extending shoe 121. The pins are associated with the upper ends of the slidably supported bars 122. The lower ends of said bars 122 support the angle iron feet 44 and 45. Thus, pressure on the shoe 121 will cause the bar 122 supported thereby to be raised. The pressure supplied to the shoe 121 is secured by the engagement of said shoe with means supported by the adjustable but rigidly secured clamping frame 77 and hereinafter to be described.

Reference will now be had to Figs. 1, 2 and 6. Positioned between the side frames 77 and supporting the same is the cross member 125. The shaft 126 is positioned substantially parallel thereto and extending forwardly, or rather inwardly, from said shaft is a clamping frame or jaw construction, comprising a clamping bar or jaw 127 which extends transversely of the table 20 and at each end is supported by longitudinally extending side bars 128. A suitable number of parallel and transversely positioned intermediate bars 129 are provided as well as a plurality of longitudinal bars 130. The longitudinal bars 130 are pivotally supported upon the shaft 126. At each side of the adjustable abutment frame 77 and extending longitudinally of the table is a rod 131 which terminates in an abutment block 132. Extending forwardly and suitably secured to the side bar 128, preferably midway between is a bracket 133 which is slotted as indicated by the dotted lines at 134. The plunger rod 131 is slidably supported in said slotted bracket 133. The bracket has an inclined face 135 and the plunger rod carries a block 136 having an inclined face for engagement with the inclined face 135 of the bracket 133. A bracket 137 suitably secured to the bumper frame 77 slidably supports the other end of the plunger rod 131. The plunger rod terminates in a head 138 and between the bracket 137 and the block 136 there is secured a concentric coil spring 139. The spring 139 normally tends to maintain the plunger rod 131 in the inwardly extended position and also in the elevated position, by reason of the inclined face 135. The head 138 pivotally supports a T-shaped detent 140 having a hook 141, the bracket 137 having an inclined face 142 for cooperation with the hook 141, see Figs. 2 and 6. The T-shaped detent pivotally supports the U-shaped rod 143 which extends transversely of the machine, each end of said U-shaped rod being associated with one T-shaped detent. Projecting inwardly from the rod 143 and suitably secured to or integral therewith is a stop rod 144 which is slidably supported in brackets 145 upon the clamping jaw frame construction previously described. Herein said brackets are positioned upon one of the longitudinal bars 130. The stop rod 144 carries an abutment head 146 for engagement and subsequent operation. A collar or stop member 147 is also secured to said rod and a coil spring is concentric with said rod and bears at one end against one of the brackets 145 and at the other end against the stop member 147, thereby normally tending to maintain the abutment head and the rod 144 in the inward and extended position.

It will be remembered that the bell crank 119 is pivotally supported at 118 and carries at one end a shoe 121 and at its other end is associated with the pin 120 which is carried by the sliding bar 122 at its upper end, which in turn supports the angle feet 44 and 45 at the lower ends. The shoe 121 is adapted to engage the abutment 132 in the reciprocatory movement of the carriage and such engagement tilts the lever 119 and elevates the respective angle foot 44 or 45, such as illustrated in Fig. 9, leaving the other angle foot in the normal or lowermost position. Continued movement of the carriage causes the elevated angle foot to engage the centrally positioned abutment 146, see Fig. 7, which compresses the spring 147 and tilts the T-shaped detent upon its pivotal support. This releases the catch 141 from the bracket 137 and permits the shoe 121, which is in engagement with the abutment 132, to slide the rod 131 outwardly and compresses the spring 139. This permits upward movement of the clamping jaw frame and in such movement the other angle foot is adapted to cooperate with the clamping jaw frame, and particularly the clamping jaw 127 to form a fold F in the cloth C which passes between said angle feet 45 and 44. The clamping bar 127 carries a cam member 148. Associated with each of the angle feet is a pivoted dog 149 and as shown in Fig. 7 said dog engages the exposed face of the cam 148 and elevates the entire clamping jaw construction and carries the cloth C under said jaw construction, whereupon the cloth is engaged by a pronged

plate bar 150 having the prongs 151 thereon. This pronged plate retains the cloth C and upon the return movement of the carriage, accompanied by the return movement of the presser foot 44, the dog 149 engages the reverse side of the cam 148 and rides over the same to form a completed fold, as shown in Fig. 9.

When the carriage reaches the opposite end of the table hereinbefore discussed, it cooperates with the various structures associated with another clamping abutment frame 77 and the same operations are repeated, the angle foot 44, however, being raised and the angle foot 45 performing the folding. Thus, a new layer of cloth is added to the pile on the table during each reciprocation of the carriage upon the table.

The entire angle foot construction and associated mechanism must, of course be raised gradually as the pile of cloth on the table increases in height and the angle feet should at all times glide smoothly over the cloth. To accomplish this there is provided mechanism which is shown in the prior patent hereinbefore referred to. This mechanism automatically controls the raising and lowering of the angle feet supporting bars 122 to keep said feet at all times and all points intimately against the cloth as it is piled on the table. A floating pilot foot or shoe 152 is mounted on the angle foot 45 and is adapted to move vertically through a slot 153 and in the base of said foot. Lugs 154 extend upwardly on the pilot foot 152 and each is pivotally supported by one end of a bell crank lever 155 pivotally supported upon the vertical flange of the angle foot 45. A link 156 connects the upper ends of the bell crank levers 155 and associated therewith is an adjustable connecting rod 156', see Figs. 3 and 11. A lever 157, see the same figures is pivotally supported at one end upon a bracket 158, while the other end of said lever is provided with a slot 159 to receive a crank pin 160 carried by a crank arm 161. The vertical shaft 162 permits vertical movement of the crank arm 161 relative thereto, but prevents independent rotative movement by means of a tongue and groove or splined connection. This construction permits the crank arm 161 to slide vertically along the shaft as the several mechanisms are elevated and lowered, in accordance with the depth of the cloth piled upon the table. The lower end of the shaft 162 is shown journaled in a bracket 163, see Fig. 4, while the upper end supports a crank arm 165. The crank arm 165 is slotted at 166 and a pin 167 is receivable thereby for reciprocatory movement. In this manner vertical reciprocatory movement of the auxiliary foot 152 is transformed into horizontal reciprocatory movement. Thus raising of the auxiliary shoe 152 causes rotation of the shaft 162 to forwardly shift the rod 167, while the lowering of the auxiliary shoe 152 will result in the rearward shifting of said rod.

It will be remembered that the shaft 111 carries the beveled gears 109 and 110 which operate the screw shafts 108. It will also be recalled that the shaft 111 carries the clutch facings 116 and 117 which are adapted to cooperate alternately with the clutch facings 114 and 115 carried by the driving gear 113 loosely disposed upon the shaft 111. An arcuate fork 168, see Figs. 1 and 11, is supported by the reciprocatory rod 167 and said segmental fork partially encircles the gear 113 upon the shaft 111. Thus gear 113 may be shifted alternately into engagement with the clutch facings 116 and 117 for successive reverse rotational movement of the shaft 111, thereby alternately raising and lowering the angle feet 44 and 45.

Reference will now be had to Figs. 1 and 3. The main power shaft 49 eccentrically supports a circular disk 169. The disk 169 is encircled by a yoke 170 having an arm 171 for transforming rotational movement into reciprocatory movement. The arm 171 of the encircling yoke 170 is pivotally connected to a lever 172 having an arcuate gear facing 173. The gear facing 173 at all times meshes with the gear 113 and thus the gear 113 is constantly oscillated, but as shown clearly in Fig. 4 said gear, when in the neutral position, does not actuate the shaft 111, but only actuates the shaft 111 when the mechanism associated with the auxiliary foot 152 selectively connects the driving gear 113 with the shaft 111. Thus, the angle feet 44 and 45 move synchronously with the pilot foot 152 as the pilot foot shifts vertically to follow gradually the increasing height of cloth on the table as layer after layer thereof is added to the pile. The height of the pile also varies due to unequal thickness of the cloth at different points, but the pilot foot 152 can readily follow the varying level and the angle feet 44 and 45 will automatically follow and always remain intimately against the cloth to smooth it out and prevent it from wrinkling.

Suitable means is likewise provided which are shown in the present application and is also shown and described in the prior patents referred to, whereby different widths of cloth may be accurately received and supported by the machine.

It is often preferable in making many garments to cut the pattern from a double layer of cloth simultaneously. This is by reason of the fact that a garment, such as a shirt, requires a double thickness of collar, cuffs, two sleeves, a front and a back. In making such garments, it is often found that although the two layers of goods which

are cut simultaneously and together are of the same pattern and appearance, there is enough difference in the dye used or the material, etc., as to affect the appearance of the garment, particularly after it has been washed or cleaned. In order to avoid this difficulty, it is highly desirable to cut each garment from the same bolt of cloth rather than from superimposed layers of two bolts. In order to accomplish this, the modified form of cloth bundle illustrated in Fig. 16 may be substituted for the cloth bolt 87, or pile of cloth shown therewith in Fig. 1, upon the base 26. The cloth bundle illustrated in Fig. 16 is provided with a base 240 having a framework consisting of a pair of parallel bars 241 which are suitably supported at a distance above the base plate 240. Said bars are provided with a plurality of parallel and transversely extending rods, which rods are adapted to be positioned upon the under and inner sides of the bolts 243 of the bundle of cloth folded, as shown therein. When the cloth is thus folded, it is supported in loops upon the rods 242, whereby it may be readily removed from both ends thereof. When the cloth is thus folded, both strips 244 may be fed into the machine in substantially the same manner as that hereinbefore described for the bolt 87, or for the cloth bundle or bolt previously described in the prior patents referred to and also illustrated in the top half of the machine, as shown in Fig. 2. It will be understood, of course, that the base 240 may be associated with the base 26 and detachably but rigidly secured thereto. Thus, the same machine is adapted to receive both ends of the cloth simultaneously from the support or bolt, whereby the double thickness of cloth may be had from the same bolt rather than two bolts, as hereinbefore described.

There is also provided upon the machine the usual reciprocation counter 200 having the actuating arm 201 which is connected by a link 202 to a lever 203 pivotally supported upon the frame. The other end of the lever 203 is connected by a rod 204 which terminates in the bumper support 205 which is engaged by one of the bumpers 82, as shown in Fig. 1, or at any other part of the adjustable bumper frame construction. Thus, each reciprocation of the carriage across the table will be registered by the counter 200.

It will be noted that the counter 200 may be readily disconnected from its actuating mechanism and thus a machine which is supplied upon a leasehold basis, the charge being based upon the use of the machine, will not record the full use of the machine when in the hands of a dishonest operator or concern. For this reason the recorder 67 is provided and it will be noted that so long as the power is supplied to the machine, the counter 67 continuously records the action of the power means, whether the machine piles cloth or not. Therefore, it is to the advantage of the operator or lessee of the machine to only operate the machine for actual work. Likewise the meter 67 is independent of the length of the carriage travel, whereas the counter 200 is not independent thereof for at each setting of the adjustable bumper 77, the carriage travels different distances. Thus a true record of the operation of the machine is not indicated by the counter 200, whereas a true record is secured by the counter or meter 67. Likewise the construction of the meter 67 is such, and its support is such, that tampering therewith is not easily accomplished. It will be noted that the brackets 63 which extend transversely of the machine must be removed and likewise both bevel gears 52 and 53 must be removed in order to permit removal of the counter mechanism. Thus substantial dismantling of the machine is required, since in order to remove the transverse cross member of the machine which forms a part of the body of the machine, it is necessary to separate the side frames 24. This is not convenient and a corroborative meter comparison would readily indicate the tampering with the indicating meter 67.

The invention claimed is:

1. In a cloth piling machine the combination of a plurality of cloth receiving devices, and a single cloth piling carriage carrying said devices for piling cloth in a plurality of piles.

2. In a cloth piling machine the combination of a plurality of cloth receiving devices, a single cloth piling carriage carrying said devices for simultaneously piling cloth in a plurality of piles, and a single power means for operating said carriage.

3. In a cloth piling machine the combination of a plurality of cloth receiving devices, a single cloth piling carriage carrying said devices for simultaneously piling cloth in a plurality of piles, a single power means for operating said carriage, means controlling said power means, and a plurality of mechanisms each associated with one of said cloth receiving devices and so associated with said power controlling means that the operation of any of said associated mechanisms is adapted to control said power means.

4. In a cloth piling machine the combination of a plurality of cloth piling devices, a single electric motor for actuating both, and a similar number of electric switches as associated with a cloth piling device for controlling the operation of said electric motor.

5. In a cloth piling machine the combination of a plurality of cloth piling devices,

a single electric motor, an electric relay switch controlling said motor, and a similar number of control switches each associated with one of said devices for controlling said relay switch and in series with each other.

6. In a cloth piling machine the combination of a carriage framework, a measuring device support incorporated in said framework, a measuring device, power means for moving said framework, and means directly connecting said power means to said measuring device for operating the same.

7. In a cloth piling machine the combination of a carriage framework including a pair of sides, a transverse support connected to said sides, a measuring device, transverse means supporting said transverse support and connected to said sides and adapted to support said measuring device, power means supported between said sides, and means directly connected with said power means and said measuring device for operating the same.

8. In a cloth piling machine the combination of a driving shaft, a carriage supporting said driving shaft and adapted to be reciprocated by the same, travel limit means positioned at opposite sides of said carriage and engageable thereby, a pair of electric switches alternately operable in the reciprocation of said carriage by said driving shaft, a pair of oppositely and continuously rotating driving members, and electromagnetic means associated with each of said continuously rotating driving members and alternately operable by said switches for reversely rotating said driving shaft by said driving members.

9. In a cloth piling machine the combination of a shaft, a pair of oppositely positioned, continuously and reversely rotating driving members concentric with said shaft, an electromagnet on each driving member, an armature upon said shaft positioned between said electromagnets, and switch means successively energizing said electromagnets for connecting one of said driving members with said driving shaft.

10. In a cloth piling machine the combination of a reciprocatory carriage, travel limit means positioned at one side of said carriage and adapted to be engaged thereby, and control means comprising a plurality of controlling members and a common member operable by the carriage in the movement thereof for simultaneously releasing said controlling members.

11. In a cloth piling machine the combination of a cloth receiving mechanism, a cloth supporting table, and means associated with said table and supported thereby for detachably securing the different forms of bundles and bolts to supply said cloth receiving mechanism.

In witness whereof, I have hereunto affixed my signature.

MORRIS L. SHAPERA.