Nov. 7, 1933. T. C. PERRY ET AL 1,933,682

MEASURING APPARATUS

Filed May 26, 1933 2 Sheets-Sheet 1

Fig. 1.

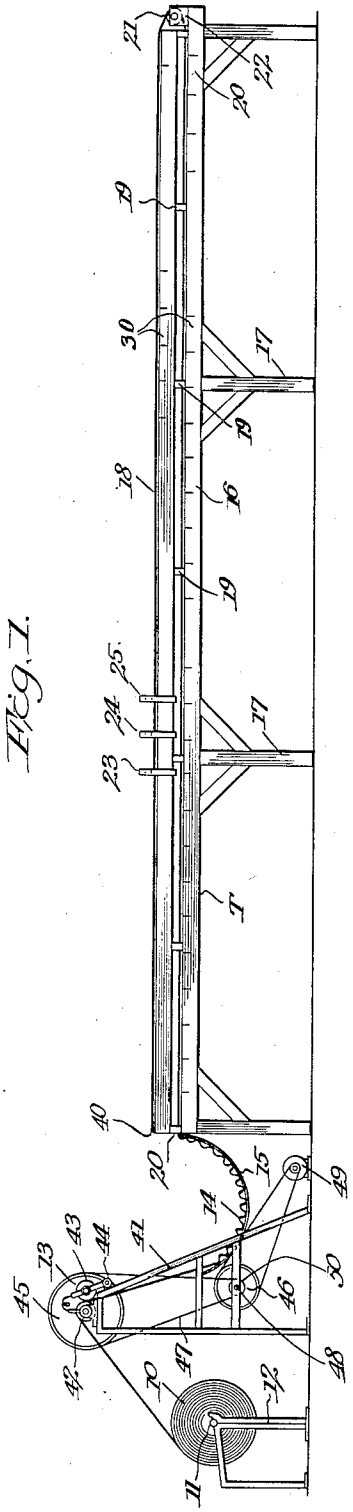
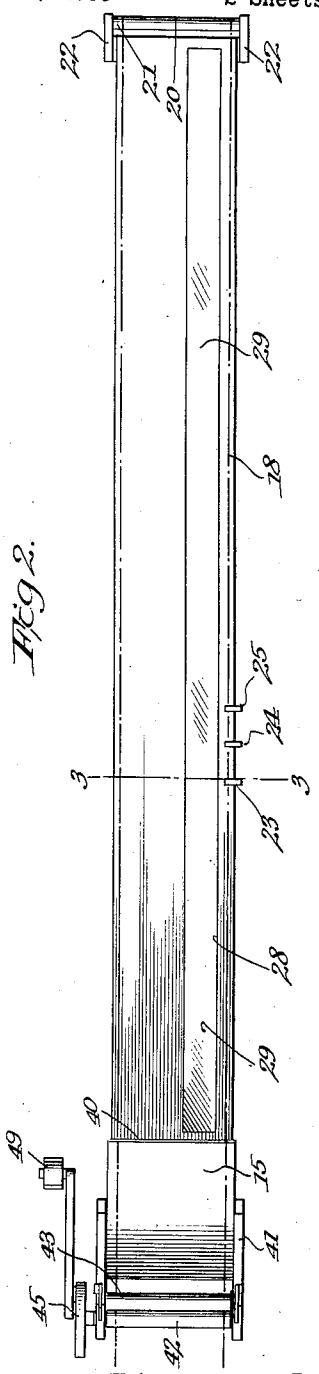


Fig. 2.



Inventors

Thomas C. Perry.

H R. Matthewson.

By Elliott P. Wallace

Attorney

Nov. 7, 1933. T. C. PERRY ET AL 1,933,682

MEASURING APPARATUS

Filed May 26, 1933 2 Sheets-Sheet 2

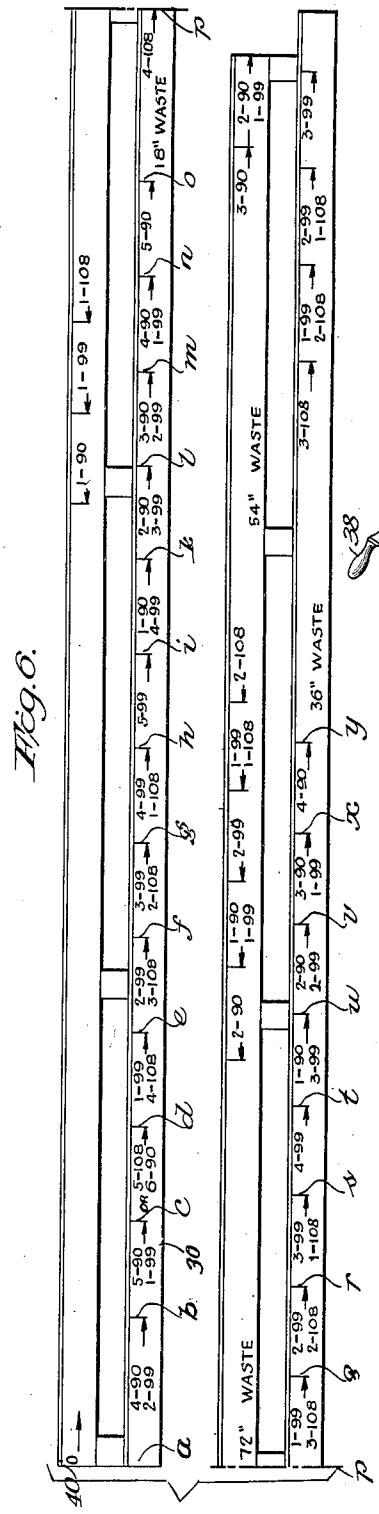


Fig. 6.

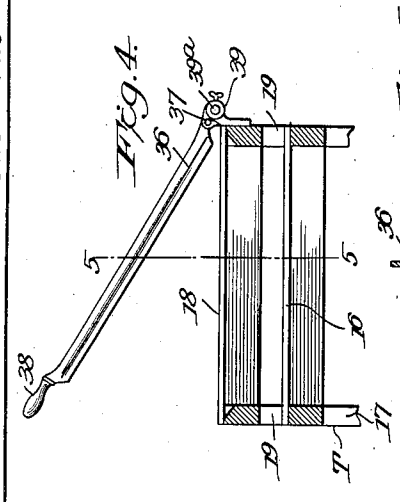


Fig. 4.

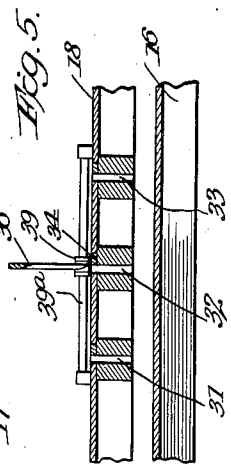


Fig. 5.

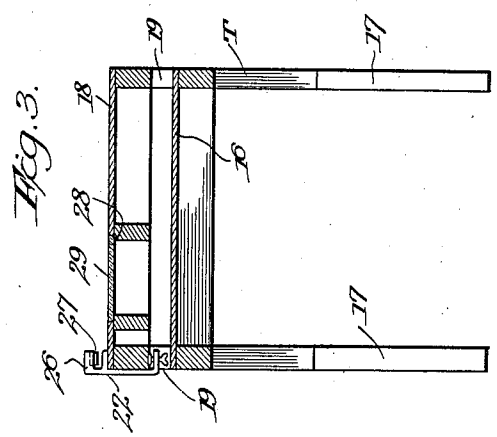


Fig. 3.

Inventors

Thomas C. Perry.

H R. Matthewson.

By Glen P. Walters

Attorney

Patented Nov. 7, 1933

1,933,682

UNITED STATES PATENT OFFICE

1,933,682

MEASURING APPARATUS

Thomas C. Perry, Sand Springs, Okla., and Herbert R. Mathewson, Lyman, S. C.; said Mathewson assignor to said Perry

Application May 26, 1933. Serial No. 673,080

7 Claims. (Cl. 33—135)

The present invention is a measuring apparatus or table useful in the manufacture of articles of predetermined sizes from sheeting materials.

In the manufacture of such articles as table cloths, bedspreads, bed sheets, and other articles of sheet material, the sheeting is usually drawn from a roll or bolt of fabric of a continuous strip, made of a plurality of lengths, each secured or seamed at adjacent ends for convenience in handling during previous processes, such as bleaching, dyeing, stamping, etc. The lengths which compose the continuous strip are of varying lengths, usually from 50 to 200 yards each.

It is customary among manufacturers of bedding and table cloths to make up the sheeting in a plurality of lengths, say for bed sheets and spreads 90 inches, 99 inches and 108 inches, which are more or less standard. It is customary, in making up these articles, for the sheeting to be drawn from a continuous roll into a lay, or a plurality of layers or piles of the length desired, and then cut. In the better grade of materials, it is customary for the fabric to be drawn from the roll on a table and then measured to the desired length, then nicked or cut at the edge, and then torn so that the tear will follow a weft thread, thereby obtaining a straight sever or cut, so that when the fabric is laundered, the torn edge will be straight.

In making up sheeting in this manner, of a given length, say 90 inches, it frequently occurs that if a seam or other defect in the continuous strip is reached, there is not sufficient length remaining between the cut end thereof and the seam or defected area, to obtain another sheet therefrom of a required length, thereby necessitating losses or waste of considerable lengths of fabric, it being understood, of course, that the sheet to be made must be a continuous non-seamed length of fabric.

The object of the present invention, is the provision of a device or apparatus which will determine for the operator, sufficiently in advance of a seam or defect, the manner in which the fabric may be cut or severed into required or desired lengths, with a minimum of waste.

In the drawings there is shown one form or embodiment of the invention for carrying out the objects thereof but it will be appreciated that showing is of an example only and variations or modifications of the invention may be made within the scope and substance of the claims.

In the drawings:

Figure 1 is a side elevation of an apparatus for carrying out the invention;

Figure 2 is a plan view of the apparatus with cloth or sheeting removed;

Figure 3 is a transverse sectional view taken on line 3—3 of Figure 2;

Figure 4 is a view similar to Figure 3 but showing different type of cutting device being employed;

Figure 5 is a sectional view taken substantially on line 5—5 of Figure 4; and

Figure 6 is side elevation showing the measuring table top or deck in two sections with a scale or other similar indications, by which the operator can practice or obtain results of the invention.

Referring more in detail to embodiment of the invention shown in the drawings, a roll of cloth or sheeting, as received from previous processing treatments, such as bleaching, dyeing, stamping, etc., and make-up of a plurality of sections or lengths of fabric, having their adjacent ends seamed or otherwise secured together, is indicated at 10. This roll is mounted on a beam 11 suitably supported by a frame or rack 12, so that the fabric may be reeled off of the beam.

It is preferred to unwind the roll 10 by an automatic mechanism 13 so as to reduce the strain on the fabric being measured and thus avoid undue stretching of the fabric. This is accomplished by the mechanism 13 feeding the fabric or sheetings from roll 10 into a loose loop or an accumulation of loose folds, as indicated at 14, which may be supported on a cradle or bin 15 from which the fabric is drawn by the operator onto the measuring table T.

The table T may be of any suitable design or construction which provides a surface upon which the cloth is laid and measured in suitable lengths, and which has associated therewith an indicator of suitable type which will indicate, or cause to be indicated, to the operator the lengths to which the sheeting must be cut between the cut or advancing edge of the sheet and the following seam or defect, in order to obtain a minimum of waste.

In order to reduce as much as possible the length of the table, it is proposed to have it comprise two or more decks or surfaces over which the fabric or sheeting passes; in the present instance, however, the table is shown as comprising two decks. It will, of course, be understood that instead of providing a table, any other means may be used over which the fabric is drawn.

The table illustrated for the purposes of this application is approximately 279 inches and com-

prises a lower deck 16 suitably supported by legs 17 and an upper deck 18 superposed above the lower deck and coextensive therewith, and suitably spaced from the top surface of the lower deck by spacing members, as indicated at 19. The cloth which has been deposited in the cradle 15 is inserted between the two decks at one end 40 of the table and passes over a roller 21 provided, at the other end 20 of the table, supported in suitable bearings 22 from whence the cloth reverses its direction and is caused to pass over the top surface of the upper deck 18.

All measuring is reckoned from the edge 40 of the table or any other suitable index or zero point adjacent thereto which may be provided. Remote from this edge 40 of the upper deck 18 are positioned or disposed suitable indicators which denote the distance from the edge 40 of the upper deck, and there are as many of these indicators as may serve the purposes of each user of this apparatus. However, in ordinary practice in the manufacture of bed sheeting three lengths are usually standard. Therefore, the marker 23 is disposed at, say, 90 inches from the measuring point 40, the marker 24 at 99 inches, and the marker 25 at 108 inches. These indicators or markers may take the form of adjustable clamps embracing a side edge of the table, as particularly illustrated in Fig. 3, and each having an extension overlying the surface of the top deck 18 and which has a sharp cutting edge 27 on its undersurface. In the manufacture of bed sheeting of higher quality, the sheets are torn from the stock by hand so that the tear will follow the weft thread and produce a straight edge at the line of sever.

The cutter 27 is employed to nick the edge of the sheeting by lifting the sheeting up under the extension 26 into engagement with the cutting edge 27 so as to mark the exact length of the sheet to be severed and also to assist the operator in initiating the tearing operation.

It often happens that after severing a sheet of desired length from the fabric stock, there is not enough material between the severed edge of the strip and the approaching seam or defect, from which a sheet of standard size can be obtained, and since the sheets which are severed from the stock must be seamless and without defects, it frequently occurs that as much as 89" of fabric are wasted.

To avoid this waste and to make it possible to reduce possible loss to not more than the difference between standard sizes of sheeting to be obtained (which in the present case is 9"), the upper deck is provided along one edge portion thereof with an elongated sight opening extending longitudinally of the upper deck, preferably from end to end thereof. Through this sight opening, the operator or an assistant can view the seams or defects in the cloth as it passes over the lower deck 16. The observation of these seams is facilitated by present practice in the mills by attaching, at the points of said defects or seams, a tag to the edge of the sheeting during some previous step in its processing. Therefore, these tags can be readily observed through the elongated slot 28 which is preferably covered with some transparent material 29.

Associated with the edge of the lower deck and with the edge of the upper deck in the direction of the travel of the cloth up to the indicators 23, 24 and 25, is a scale 30 from which the operator or an assistant can determine in what manner the stock fabric can be best severed into standard lengths between the free end of the stock and the seam or defect appearing in the slot 28. For instance, should a seam or defect appear through the slot 28 between the scale indications *a* and *b*, the operator or his assistant can observe that four sheets 90 inches long and two sheets 99 inches long can be obtained, with a maximum loss of waste of 9 inches according to the position of the defect or seam between the indications *a* and *b*, and so on according to the scale indication shown in Fig. 6 up to the scale indication *m* and *o*, which latter indicate when a seam or defect has appeared between them that five 90 inch sheets can be obtained with a maximum waste of 9 inches. Should the seam or defect occur exactly at any of the indications from *b* on down the scale, no waste will be occasioned. All seams and defects will appear at some point in the scale between the indicators *a* to *o* inclusive, but should the seam or defects be overlooked between the indicators *b*—*o*, the scale has been worked out beyond to further indicate the manner in which the fabric can be severed into standard units with a minimum waste between its free edge and said seam or defect, as may be observed from Fig. 6. For instance, if a seam or defect should occur between the indications *o* and *p*, there will be a waste of at least 18 inches, and if it appears between *y* and *z* there will be a waste of 36 inches, etc.

It will be understood, however, that in the use of the present device, after a length of sheeting has been severed, the end of the remaining fabric stock must be drawn to coincide with the zero point 40 from which all calculations are made. Before the edge of the fabric has been made to so coincide with the point 40, the defects may be observed and the operator determine from the scale the best manner in which to sever the sheet into standard sizes between the edge of the fabric stock and such seam or defect as may appear through the slot 28.

In some instances it may be desired instead of cutting the sheet by hand to provide some other type of cutting device. Therefore, three slots 31, 32 and 33 are provided transversely across the upper deck, said slots coinciding with the measurement of the standard lengths of sheeting desired. A stationary cutting edge 34 is provided for each of the slots 31, 32 and 33 and will cooperate with the slicing knife 36 preferably pivoted at one end 37 to a block 39 and provided with a handle 38 at its other end. Any other type of knife may be used such as an ordinary rotary cutting knife. The block 39 slides on a guide rod 39*a* so that the knife may be adjusted to cooperate with anyone of the knife edges 34 of said slots.

The feeding mechanism 13 preferably comprises a frame 41 upon which is mounted two feeding rollers 42 and 43, the roller 42 being stationarily mounted and the roller 43 being pivotally mounted, as at 44 and yieldably held against the roller 42 which has a pulley 45 on one end. A shaft 48 is rotatably mounted on the lower part of the frame 41 and carries a drive pulley 46 having a belt or other suitable driving connection with a motor 49; and the pulley 45 also has a belt, or other suitable driving connection 47, with the pulley 50 on the shaft 48.

It will also be understood that instead of providing the table with a pluraliy of decks, there may be only one deck or surface and that the provision of the table in two or more decks is merely for purposes of compactness and to enable

one operator to both tear the sheeting and to observe with facility the point in the scale where the seams or defects appear.

It is obvious that the invention is not limited to the form of construction shown, but that this may be modified in many ways within the scope of the appended claims.

What is claimed as new is:—

1. A device for measuring sheeting in definite unit lengths, including means over which a multiple of unit lengths of sheeting to be severed may be passed, said means including an index with which the advance end of the sheeting is to register, and markers spaced with reference to said index for indicating a plurality of definite unit lengths in which the sheeting may be severed, and means disposed along the path of the material in relation to said index for indicating the number of such lengths the sheeting may be best divided into between the advance edge of said sheeting and a following seam or defect in said sheeting adjacent the indicating means.

2. A device for measuring sheeting in definite unit lengths including a measuring table under and over which a strip of sheeting may be passed, said table having an index thereon from which measurements are made and with which the advance end of the sheeting is to register, markers spaced with reference to said index for indicating a plurality of definite unit lengths into which the sheeting may be severed, means disposed along the course of travel of the sheeting for indicating the number of such unit lengths the sheeting may be best divided into between the advance edge of the sheeting and a following seam or defect therein adjacent said indicating means, and a sight opening in the table overlying the underreach of sheeting for permitting the operator to observe said seam or defect in the sheeting in relation to said indicating means.

3. A device for measuring sheeting in determined lengths of sheeting from a continuous supply, including a table-like support over which the sheeting is drawn and on which it is measured and severed, said table being of a length that is a multiple of the unit sheeting length and having a zero point from which measurements are made, a plurality of spaced markers disposed along the length of the table and removed from said zero point to indicate the points at which the sheeting may be severed for obtaining determined lengths; and a scale disposed along an edge of the course of travel of the sheet for indicating the number of such lengths the sheeting may be best divided into between the advance edge of the sheeting and a following seam or defect therein.

4. A device for measuring sheeting in determined lengths of sheeting from a continuous supply, including a table-like support over which the sheeting is drawn and on which it is measured and severed, said table being of a length that is a multiple of the unit sheeting length and having a zero point from which measurements are made, a plurality of spaced markers disposed along the length of the table and removed from said zero point to indicate the points at which the sheeting may be several for obtaining determined lengths; and a scale disposed along the course of travel of the sheet for indicating the number of such lengths the sheeting may be divided into between the advanced edge of the sheeting and a following seam or defect therein, and fabric splitting means on said markers by which the sheeting may be cut and severed in determined lengths.

5. A device for measuring sheeting in determined lengths of sheeting from a continuous supply, including a table-like support arranged in superposed decks over which the sheeting is drawn in a tortuous direction from the lower to the upper deck, said upper deck having a zero point from which measurements are made, a plurality of spaced markers disposed along the length of the upper deck and removed from said zero point to indicate the points at which the sheeting may be severed for obtaining determined lengths, a scale disposed at one side edge of a lower deck and along the course of travel of the sheet for indicating the number of such lengths the sheeting may be divided into between the advance edge of the sheeting and a following seam or other area of the fabric.

6. A device for measuring sheeting in determined lengths of sheeting from a continuous supply, including a table-like support arranged in superposed decks over which the sheeting is drawn in a tortuous direction from the lower to the upper deck, said upper deck having a zero point from which measurements are made, a plurality of spaced markers disposed along the length of the upper deck and removed from said zero point to indicate the points at which the sheeting may be severed for obtaining determined lengths, a scale disposed at one side edge of the deck next to the upper deck and along the course of travel of the sheet for indicating the number of such lengths the sheeting may be divided into between the advance edge of the sheeting and a following seam or defect, and an elongated slot in the upper deck and extending longitudinally thereof through which the operator may observe a seam or defect in the sheeting passing over the next lower deck and within the range of said scale.

7. A device for measuring sheeting in determined lengths of sheeting from a continuous supply, including a table-like support over which the sheeting is drawn and on which it is measured and severed, said table having a zero point from which measurements are made, a plurality of spaced markers disposed along the length of the table and removed from said zero point to indicate the points at which the sheeting may be severed for obtaining determined lengths; and a scale disposed along the course of travel of the sheet for indicating the number of such lengths the sheeting may be divided into between the advance edge of the sheeting and a following seam or defect therein; a cradle at the forward end of said table, and means for feeding said sheeting from a roll and delivering it to said cradle in a loose loop or folds from which the sheeting is drawn over the said table.

THOMAS C. PERRY.
HERBERT R. MATHEWSON.