F. E. T. MANZ.

SHEETING MACHINE.

APPLICATION FILED DEC. 7, 1916.

1,260,786.

Patented Mar. 26, 1918.

2 SHEETS—SHEET 1.

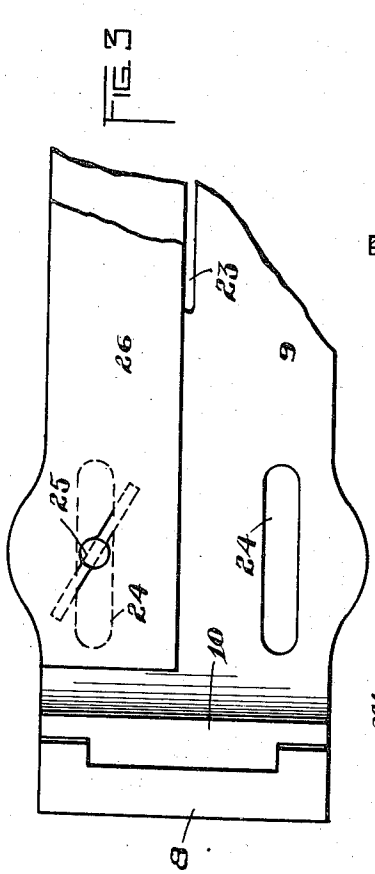


FIG. 3

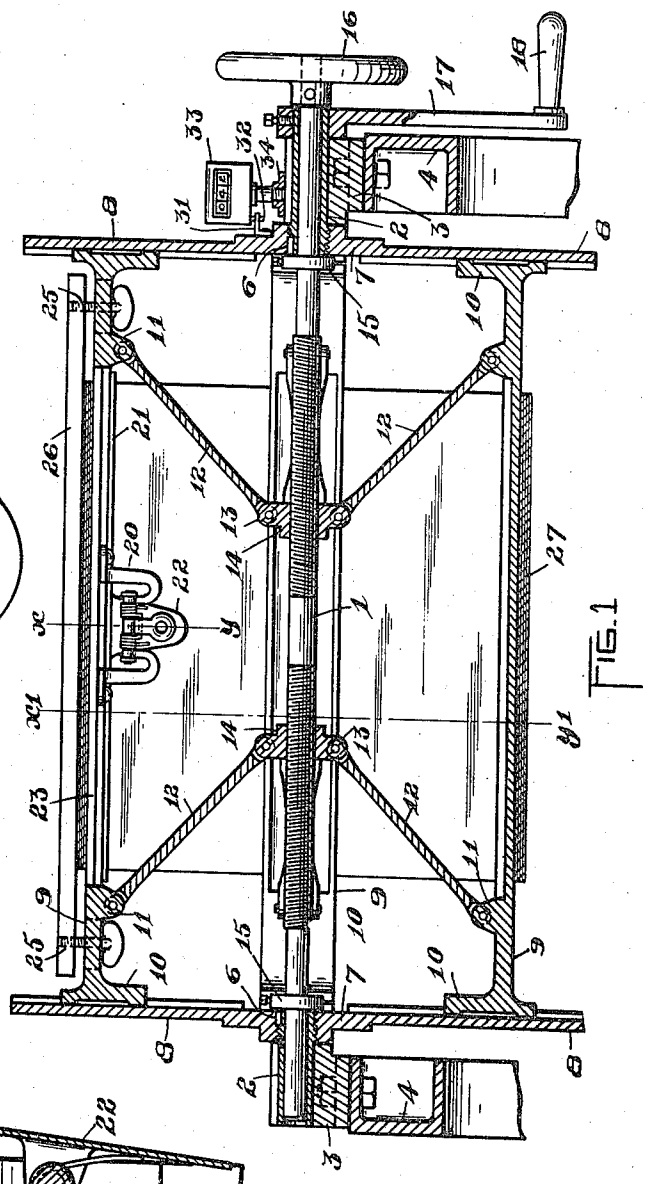


FIG. 1

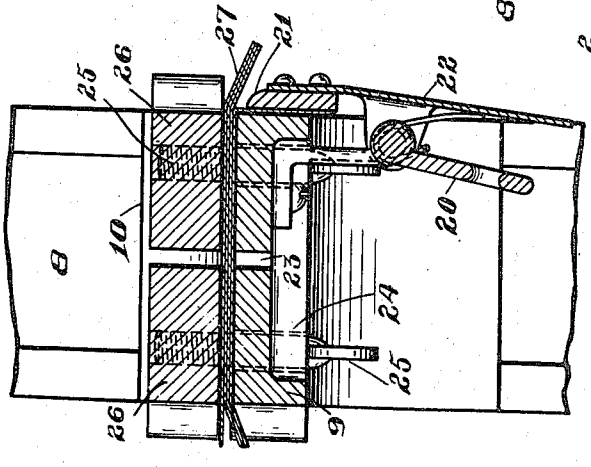


FIG. 2

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2 SHEETS—SHEET 2.

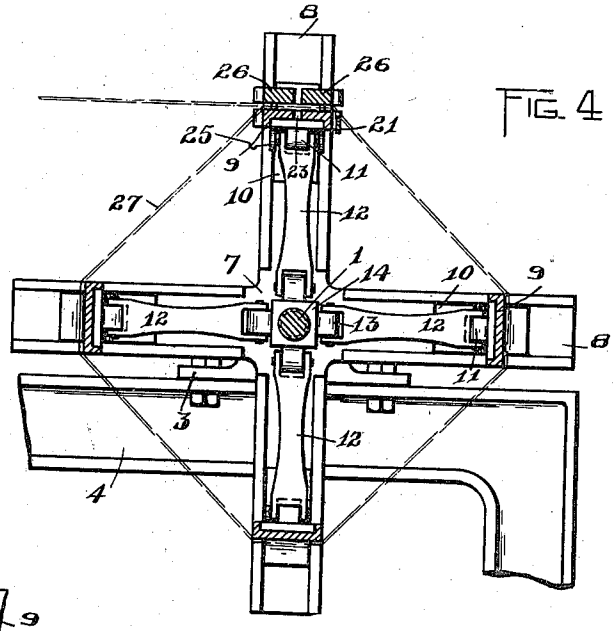


FIG. 4

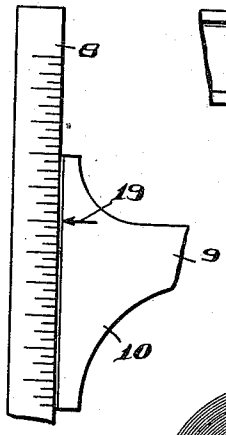


FIG. 6

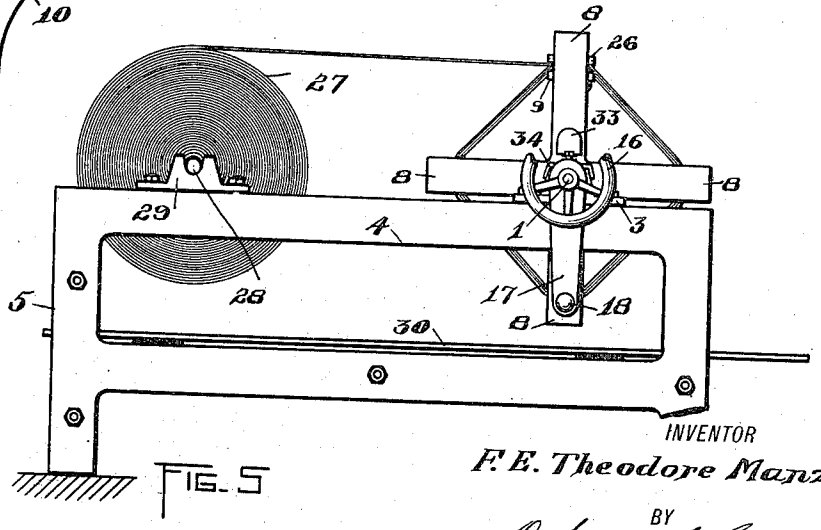


FIG. 5

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FREDERICK E. THEODORE MANZ, OF ROCHESTER, NEW YORK.

SHEETING-MACHINE.

1,260,786. Specification of Letters Patent. Patented Mar. 26, 1918.

Application filed December 7, 1916. Serial No. 135,522.

To all whom it may concern:

Be it known that I, FREDERICK E. THEODORE MANZ, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and Improved Sheeting-Machine, of which the following is a specification.

This invention relates to devices by means of which paper, cloth, fringe and other such materials may be unwound from a roll or bolt and thereafter cut along a single line into a plurality of sheets of substantially equal length.

The main object of my invention is to provide a device of the character described especially adaptable for use by paper box manufacturers and comprising a reel that is simple in construction and operation and on which paper for the covers or wrappers of boxes may be wound from a supply roll and cut, there being a winding of paper once around the reel for each sheet to be cut.

A further object is to make the reel adjustable so that the windings of paper thereon and consequently the sheets to be cut may be of a variably predeterminable length.

And, a still further object is to provide clamping means for retaining the sheets on the reel after they are cut and until released by the operator.

The invention will first be described and will then be particularly defined in the claims hereinafter set forth.

The accompanying drawings illustrating the invention are as follows;—

Figure 1 is a vertical central sectional view taken longitudinally of the reel; Fig. 2, an enlarged sectional detail taken along the line x—y of Fig. 1; Fig. 3, an enlarged plan view showing a portion of the supporting bar having a slot through which the paper is cut, a portion of one of the clamping bars and, also, the end of one of the guiding arms for such supporting bar; Fig. 4, a vertical sectional view of the reel taken along the line x^1—y^1 of Fig. 1; Fig. 5, a side elevation of the reel, the supply roll and the supporting table; and Fig. 6, a detail showing a portion of one of the guiding arms and engaging bar, such arm having indications thereon whereby the adjustment of the reel for different lengths of sheets may be determined.

Similar reference numerals refer to similar parts throughout the several views.

The numeral 1 indicates a longitudinally disposed main shaft having two central portions of equal length on one of which is cut a left and on the other a right hand thread. This shaft is revoluble at its ends in short hollow shafts or sleeve members 2 which are journaled in open bearing blocks 3 secured to the top side frame members 4 of a supporting table 5.

Threaded on the inner ends of the hollow shafts 2 and fixed thereto by suitable means, as the locking keys 6, are hub members 7 from each of which extends a plurality, preferably four, of equally spaced radial arms 8. Extending between opposite ones of these arms are bars 9 for supporting the paper and having end members 10 adapted to engage and be guided in channels formed in the said arms, such end members being elongated, as indicated, to provide suitable bearing surface whereby the bars are always held parallel with the shaft 1 and against any tendency of angular displacement. The bars 9 may be channeled, as shown in the drawings, or otherwise suitably cut away to lighten construction and formed on the inner faces thereof, equally distant from the center and near the end members 10, are lugs 11 to which are pivotally connected the bifurcated outer ends of links 12, the bifurcated inner ends of which are pivotally connected to similar lugs 13 formed on the four sided nuts 14, 14, one of which is on the portion of the shaft 1 having the right hand thread and the other on the portion having the left hand thread. Each bar 9 has two such links and each link is connected to the nut 14 on the same side from the center of the reel therewith.

The shaft 1 is held against longitudinal movement by collars 15 secured to the shaft by set screws and engaging the inner faces of the hub members 7 of the reel, the outer faces of which engage the bearing blocks 3; and secured to the right hand end of the shaft 1, with respect to Fig. 1, is a hand-wheel 16. Between such wheel and the adjacent bearing block 3 is a crank 17 secured by suitable means, as a set screw, to the hollow shaft 2 and having on its outer end an operating handle 18.

Turning the hand-wheel 16 rotates the shaft 1 which effects a movement toward or from each other of the nuts 14, 14 according to the direction in which the wheel is turned. When these nuts move toward each other, the connecting links 12 draw the bars 9 inwardly toward the shaft 1, and when they move from each other the bars are moved outwardly, the ends 10 of the bars being braced and guided by the channeled arms 8 in the manner stated. The construction of the reel provides for a considerable range of adjustment, and to secure the proper adjustment for a certain length of sheet to be cut a scale is marked on the side of one of the arms 8, as indicated in Fig. 6. Thus, if the length of sheet is to be forty inches, the bars 9 are moved in or out by turning the hand-wheel 16 until the pointer 19 on the bar 9 (Fig. 6) registers with the corresponding forty inch mark on the scale. Turning the crank 17, which is done by means of the operating handle 18, rotates the reel for winding the paper thereon.

Secured to the inner face of one of the supporting bars 9 is one member 20, having an eye at its outer end adapted to be engaged by the thumb, and to the gripping bar 21 the other member 22 of any suitable hand controlled spring clip for supporting the gripping bar 21 and holding it in yielding engagement with one of the side edges of the said bar 9. This bar 9 also has formed therethrough a centrally disposed longitudinal slot 23 extending from one to the other of the lugs 11, and between these lugs and the end members 10 are formed other slots 24 for receiving the heads of thumb-screws 25 threaded into the removable clamping bars 26, two of such bars being preferably provided, as indicated, and being separated substantially the width of the slot 23.

The operation of the sheeting machine or reel is as follows,—

The supply roll of paper 27 is revolubly supported on a shaft 28 journaled in open bearing blocks 29 secured to the top side frame members 4 of the table 5. The reel is adjusted, in the manner above described, for the proper length of sheet to be cut and the free end of the paper 27 is bent over the side of the slotted supporting bar 9 where it is held by the gripping bar 21. The reel is then rotated by engaging the handle 18 and turning the crank 17, and the paper, which is indicated in full lines in Figs. 1, 2 and 5 and in broken lines in Fig. 4, is wound thereon over the supporting bars 9. The reel is given one complete rotation for each sheet required and when the proper number of rotations have been made the clamping bars 26 are placed in position, as shown in Figs. 1, 2 and 3, by inserting the heads of the thumb-screws 25 through the slots 24 in the aforesaid slotted bar 9 and turning the screws to bring the clamping bars tight against the paper so as to hold the sheets on the reel after being cut which operation is done by means of a knife engaging between the clamping bars and through the slot 23.

By releasing the clamping bars 26 one at a time the sheets can be more easily handled while removing them from the reel, and for receiving the sheets any suitable shelf such as that shown at 30 in Fig. 5 or a drawer may be provided on the supporting frame or table 5. The sheets will vary slightly in length, owing to the greater circumference around which each successive sheet is wound, but this is immaterial as it is necessary to allow a margin for trimming.

On the right hand hub member 7 there is shown a finger 31 adapted to engage a cooperating projecting member 32 carried by a register 33 supported by a plate 34 secured to the right hand bearing block 3. Actuation of this register by means of the finger 31 will record the rotations of the reel thus automatically counting the sheets to be cut.

From the foregoing it is believed that the construction, purpose and manner of operating the sheeting machine are sufficiently clear to call for no further explanation herein. It might be stated, however, that the device while being more especially adaptable for paper box factories may be used to advantage for cutting sheets of materials other than paper.

What I claim is:

1. The combination, in a device of the character and for the purpose described, of two hollow shafts, bearing members for such shafts, a shaft revolubly supported in said hollow shafts and having a right hand thread on one portion and a left hand thread on another portion thereof, end members secured to said hollow shafts and having a plurality of radially extending arms, supporting bars extending between opposite ones of said arms, one of said bars having a longitudinal slot therethrough, a nut on each threaded portion of the said inner shaft, means for preventing longitudinal movement of said inner shaft, links pivotally connected to one of said nuts and to one end of the supporting bars, links pivotally connected to the other of said nuts and to the other end of the supporting bars, means as a hand wheel on said inner shaft for turning the same to effect an adjustment of said bars, a crank secured to one of said hollow shafts for rotating the said end members, a gripping member carried by one of said bars, means for holding such member in yielding engagement with the said bar, and means for clamping material wound on the device to the said slotted bar.

2. The combination, in a device of the character and for the purpose described, of two hollow shafts, bearing members for

such shafts, a shaft revolubly supported in said hollow shafts and having a right hand thread on one portion and a left hand thread on another portion thereof, end members secured to said hollow shafts and having a plurality of radially extending channeled arms, supporting bars slidable in and extending between opposite ones of said arms, one of said bars having a longitudinal slot therethrough, a nut on each threaded portion of the said inner shaft, means for preventing longitudinal movement of said inner shaft, links pivotally connected to one of said nuts and to one end of the supporting bars, links pivotally connected to the other of said nuts and to the other end of the supporting bars, means as a hand wheel on said inner shaft for turning the same to effect an adjustment of said bars, a crank secured to one of said hollow shafts for rotating the said end members, a gripping member carried by one of said bars, means for holding such member in yielding engagement with the said bar, and means for clamping material wound on the device to the said slotted bar.

3. The combination, in a device of the character and for the purpose described, of two hollow shafts, bearing members for such shafts, a shaft revolubly supported in said hollow shafts and having a right hand thread on one portion and a left hand thread on another portion thereof, end members secured to said hollow shafts and having a plurality of radially extending channeled arms, supporting bars slidable in and extending between opposite ones of said arms, one of said bars having a longitudinal slot therethrough, a nut on each threaded portion of the said inner shaft, means for preventing longitudinal movement of said inner shaft, links pivotally connected to one of said nuts and to one end of the supporting bars, links pivotally connected to the other of said nuts and to the other end of the supporting bars, means as a hand wheel on said inner shaft for turning the same to effect an adjustment of said bars, a crank secured to one of said hollow shafts for rotating the said end members, a gripping member carried by one of said bars, means for holding such member in yielding engagement with the said bar, and detachable means for clamping material wound on the device to the said slotted bar.

4. In a device of the character and for the purpose described, two revolubly supported end members and means for rotating the same, a plurality of supporting bars over which the material to be cut is wound extending between said end members, one of said bars having a longitudinally extending slot, a gripping member supported in a manner to hold an end of the material to be cut against one side of the said slotted bar, a clamping bar extending longitudinally of and on the outer face of said slotted bar, and means for adjustably and removably securing the clamping bar to the said slotted bar.

5. In a device of the character and for the purpose described, two revolubly supported end members and means for rotating the same, a plurality of supporting bars over which the material to be cut is wound extending between said end members, one of said bars having a longitudinally extending slot, a gripping member carried by such slotted bar and adapted to hold an end of the material to be cut against one side thereof, a clamping bar extending longitudinally of and on the outer face of said slotted bar, and means for adjustably and removably securing the clamping bar to the said slotted bar.

6. In a device of the character and for the purpose described, two revolubly supported end members and means for rotating the same, a plurality of supporting bars over which the material to be cut is wound extending between said end members, one of said bars having a longitudinally extending slot, a gripping member carried by such slotted bar and adapted to hold an end of the material to be cut against one side thereof, two clamping bars for holding the ends of the sheets on the said slotted bar after the material on the reel has been cut, such bars extending longitudinally of and on the outer face of the slotted bar one each side of the said slot, and means for adjustably and removably securing the clamping bars to the said slotted bar.

F. E. THEODORE MANZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."