

July 31, 1923.

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W. B. MUNN

PACKAGE WRAPPING MACHINE

Filed Jan. 3, 1922

2 Sheets-Sheet 1

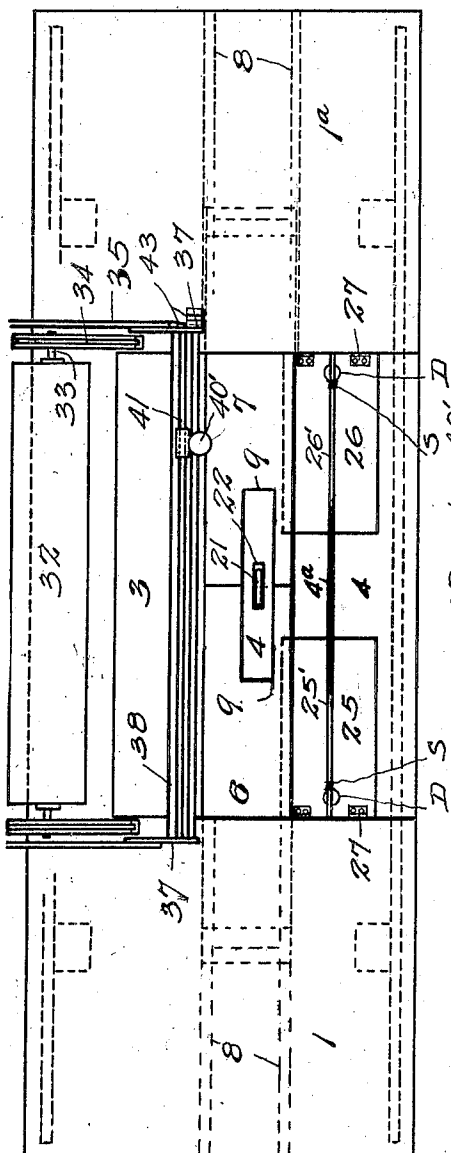


FIG. 1.

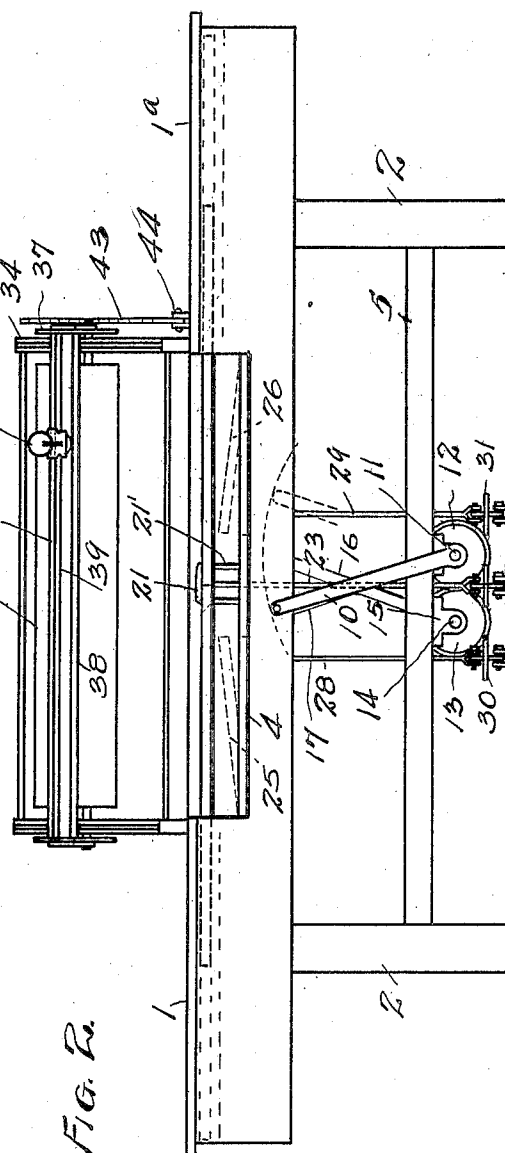


FIG. 2.

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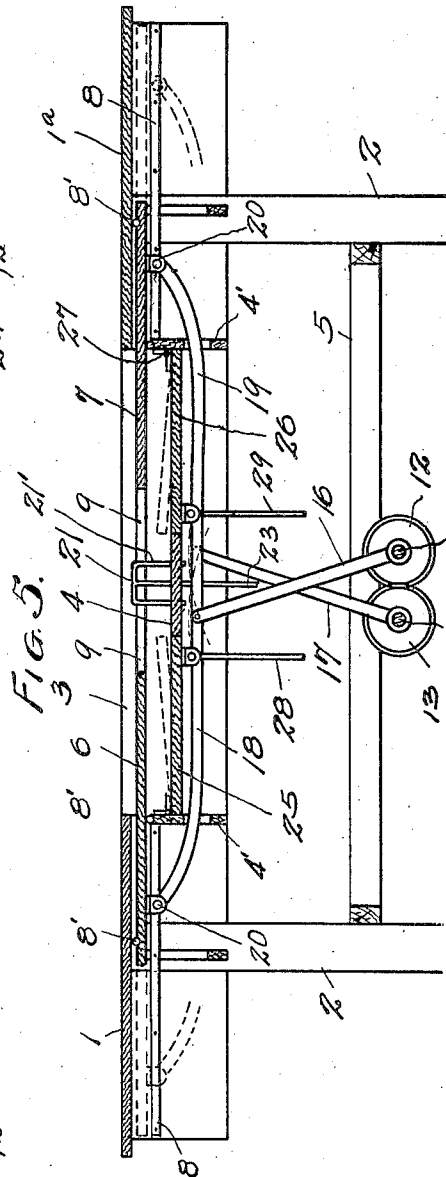
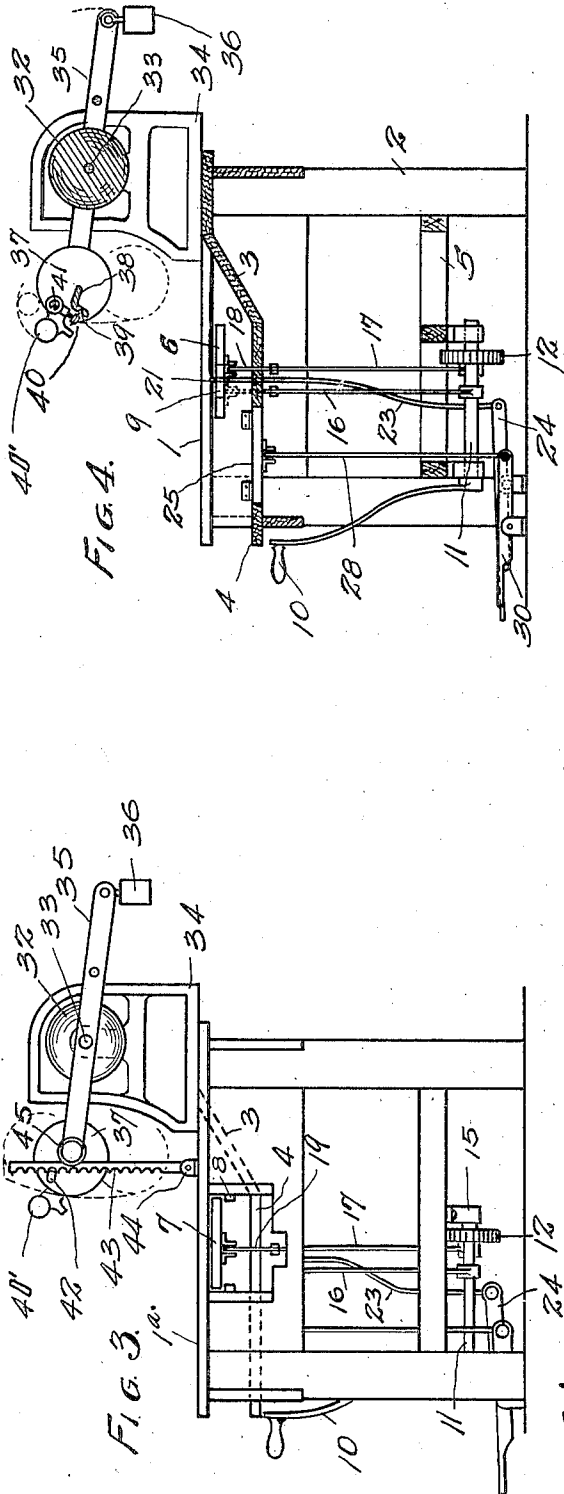
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2 Sheets-Sheet 2



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PACKAGE-WRAPPING MACHINE.

Application filed January 3, 1922. Serial No. 526,651.

To all whom it may concern:

Be it known that I, WILLIAM B. MUNN, a citizen of the United States of America, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Package-Wrapping Machines, of which the following is a specification.

My present invention relates to an improved package machine designed especially for use in assembling, wrapping, and tying bundles of articles into compact and neatly wrapped packages. The invention is particularly adapted for use in wrapping flat pieces in bundles, as for instance laundered articles, and is primarily designed to provide means operated by manual power and means operated by pedal power conveniently combined and arranged whereby the packages may be wrapped with facility and dispatch.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention, and while I shall hereinafter refer to the machine in connection with the wrapping of bundles of laundry, or flat laundered pieces, it will be understood that the device is adapted for various other uses, and such uses are contemplated.

Changes and alterations may be made in the illustrated exemplification of my invention, within the scope of my appended claims, without departing from the spirit of my invention.

Figure 1 is a plan view of the machine embodying my invention.

Figure 2 is a view in front elevation of the machine.

Figure 3 is an end view as seen from the right in Figures 1 and 2.

Figure 4 is a transverse sectional view through the central portion of the machine.

Figure 5 is a longitudinal, vertical, sectional view through the central portion of

the machine, omitting the wrapping-paper roll and cutting device.

In the preferred form of the invention as illustrated in the drawings I utilize a table comprising the two flat, horizontal end portions 1 and 1^a fashioned of suitable material and supported on the four legs 2, the table as a whole being rectangular in shape as indicated in Figure 1 and of suitable dimensions, in order that the flat pieces of laundry to be bundled and wrapped may be received, for instance at the left end, and the wrapped and tied packages be delivered or deposited at the right end of the table.

At its approximate center the top of the table is inclined as at 3, declining toward the front of the table to form a support and guide for a sheet of wrapping paper, and this inclined portion merges into a depressed or lowered shelf 4 extending to the front edge of the table to afford a stationary support and space for the assembled pieces and the operation of wrapping them into a bundle or package.

The legs 2 are braced by the utilization of frame bars 5 to form a rigid structure, and transverse partitions 4' are spaced at the sides of the center of the table at the ends of the lowered shelf, with their upper ends or edges terminating below the inner edges of the table sections 1 and 1^a.

As temporary supports, that are to be withdrawn at the proper time, for the flat pieces as they are being assembled, I provide a pair of complementary, longitudinally disposed, horizontal, reciprocable or slidable leaves 6 and 7 of proper width to support a pile of laundry pieces, and of the required length to slide over the depressed shelf 4 and meet at the center of the table, as shown in Figures 1, 2 and 5, for the purpose of temporarily supporting a pile of laundry pieces. For guiding these slidable leaves I utilize strips or cleats 8, 8', disposed beneath the slide leaves, and to insure a smooth movement of the leaves in sliding I employ rollers as 8' between the upper surface of the leaves and the under faces of the table section 1 and 1^a, and also place simi-

lar rollers at the upper edges of the partitions 4' beneath the slide leaves. Thus the leaves are maintained in stable position and may be reciprocated longitudinally of the table, toward or away from its center, with facility and dispatch. At the inner ends of the respective slide leaves a complementary notch 9 is provided, which, when the leaves are in closed position form a rectangular slot or opening in the abutting leaves for a purpose to be described.

The slide leaves are manipulated through the instrumentality of a hand lever 10 located at the front center of the table in convenient and accessible position for the bundle wrapper, and affixed to a rock shaft 11 having a gear 12 thereon. This gear meshes with a complementary gear 13 on a countershaft 14, and the shafts 11 and 14 are journaled in suitable bearing brackets 15 supported from the frame 5, in order that by swinging the lever 10 as indicated in dotted lines Figure 2, both shafts may be rocked, simultaneously, to swing the levers 16 and 17 affixed to these respective shafts. As best shown in Figure 5, the levers 16 and 17 extend upwardly and are inclined at the sides of the longitudinal center of the table, with their upper ends disposed beneath the slide leaves and under the depressed shelf 4. By means of the outwardly extending, curved links 18 and 19, the respective levers 17 and 16 are connected to the slide leaves 6 and 7 at the pivot points 20 beneath the leaves, and it will thus be apparent that when the lever 10 is swung to the right to dotted position in Figure 2, the leaves 6 and 7 will be withdrawn from the center of the table, disappearing beneath the respective table sections 1 and 1^a, and leaving an open, unobstructed space above the shelf 4.

In conjunction with these slide leaves for temporarily supporting the pile of laundry-pieces I utilize a vertically depressible head, in the form of a longitudinally disposed, short bar 21, adapted to move and project through a complementary slot 22 in the depressed shelf and fashioned with a pair of vertical guide arms 21'. The head is located in such position as to project slightly above the top surface of the slide leaves and receive the load or weight at the central portion of the pile of flat-pieces when they are placed on the abutting leaves, and as seen in Figures 1 and 5 is positioned centrally of the slot 9—9 in the leaves for this purpose. In forming the pile of flat pieces, with the parts in position shown in Figures 1, 2 and 5, they are laid on the abutting leaves, centrally positioned thereon, with part of the weight supported on the head 21. After the pile has been formed, the operating lever 10 is swung to the right in Figure 1, and the slide leaves are parted and withdrawn from beneath the pile. The function of the head

is to receive the load of the pile with sufficient friction as to prevent either of the slide leaves, as they are being withdrawn, from pulling the pile to right or left, and the head thus maintains the pile in proper position for subsequent operations. Upon withdrawal of the slide leaves, the head is immediately lowered through the stem connection 23 with a treadle 24. The normal position of the head is flush with the top of the shelf 4, in slot 22, but for supporting the pile of pieces in connection with the slide leaves, the treadle 24 is depressed by foot power at its front end to elevate the stem 23 and head 21. By releasing the treadle the head falls by gravity, or by spring power.

In connection with the wrapping and tying of the bundle I utilize a pair of hinged boards, 25 or 26, each hinged at its outer end at 27 to one of the partitions 4' in position to be flush with the top of the shelf 4, and with its inner end adapted to be elevated. These hinged boards are disposed in openings provided therefor in the shelf and are provided with central, longitudinally extending grooves 25' 26' in their upper surfaces, and with the aligned groove 4^a in the top surface of the shelf, a continuous groove is formed for the reception of a string or cord to be wrapped around the bundle for securing the package. At D depressions are formed in the boards for the accommodation of the finger and thumb of each hand of the bundle wrapper, and at S are provided spring clips for temporarily holding the ends of the cord or string until it is to be tied about the bundle. These hinged boards are operated singly and independently, each having a connecting rod or link as 28, 29 forming a pivotal connection with the respective treadles 30 and 31, located in convenient position for the foot of the bundle wrapper.

The sheet of wrapping paper for the bundle is supplied from the paper roll 32, supported above the table and at the rear thereof on the longitudinally extending shaft 33 which may be oscillated and is journaled in the end frames 34 erected above the table top. A tiltable cutter frame 35 is suspended on the shaft 33, balanced at the rear by a counterweight or counterweights 36 suspended from the frame, and at the front of the frame are a pair of spaced disks 37 fixed thereto and joined by a rigid angle bar 38.

The disks or end pieces 37 and the cutter angle-bar 38 form rigid members of the tiltable or oscillatable cutter frame, and the cutter bar is fashioned with a longitudinally extending groove 39, from end to end, to receive the rotary knife 40 supported from the head 40'. The knife head is slidable on a fixed guide bar or rod 41 parallel with

and located above the cutter bar and joining the two end disks 37, and the knife head may be slid across the length of the cutter bar with the rotary cutter traveling in the groove 39 to sever a sheet of paper from the roll. To maintain the tiltable roll in stationary position a detent 42 on one or both of the disks of the tiltable frame, is adapted to engage a rack bar 43 pivoted at 44 on the table top and standing erect at the front end or ends of the tiltable frame, a guide 45 on the rack bar being used if required. The paper roll has stationary bearings in the fixed frame 34, but it will be apparent that the cutter frame may be tilted at its front end to lowered or elevated position as indicated by dotted lines in Figures 3 and 4.

After the flat pieces of laundry have been stacked on the abutting slide leaves, and before the head 21 has been elevated, a strip of paper is pulled from the roll, passed over the cutter bar 38, and the pulling action of the paper sheet may depress the front end of the tiltable frame to lowered position. The free end of the paper strip is passed down the incline 3 beneath the abutting slide leaves and over the shelf 4, one hand of the bundle wrapper being utilized to draw the sheet from the roll, while the other hand is used to slide the cutter head and rotary knife across the paper strip whereby the rotary cutter, traveling in the groove severs the sheet of paper. The head 21 is now elevated by pedal action and the slide leaves withdrawn by manual power leaving the stack or pile of laundry pieces resting on the paper sheet and head, whereupon the head is permitted to fall leaving the stack and paper sheet resting on the shelf. The stack is now shifted on the paper sheet toward the front of the shelf, (a string or cord having previously been placed in the groove 25' 4^a 26') and rests on the shelf and its flush, hinged boards 25, 26. According to the position of the stack on the hinged boards, the wrapper selects one or the other of the treadles 30, 31 to elevate one end of the stack. If treadle 30 is selected the free end or inner end of board 25 is elevated to tilt the left end of the stack, thus giving access for the left hand of the wrapper to manipulate the bundle and wrap the sheet of paper about it. After wrapping the bundle the cord or string is wound around the package as usual, tied, and the bundle then shifted to the section 1^a of the table. After the bundle has been wrapped, the treadle 30 is released and the hinged board 25 permitted to drop into place.

In preparation for the next wrapping operation, the slide leaves are again brought to closed, abutting position, the sheet of paper is severed, the stack is made, and the successive bundles thus formed and wrapped.

Having thus fully described my inven-

tion, what I claim as new and desire to secure by Letters Patent is—

1. The combination with a table having a depressed shelf to receive a paper sheet, of a pair of longitudinally reciprocable slide leaves adapted to be positioned above said shelf to receive and temporarily support a load, and means for supporting said load as the leaves are withdrawn from supporting position.

2. The combination with a table having a supporting shelf to receive a paper sheet, of a pair of longitudinally disposed, reciprocable leaves adapted to be positioned above said shelf to receive and temporarily support a load, a head and means for elevating said head co-acting with said leaves to temporarily support said load as the leaves are withdrawn from supporting position.

3. The combination with a table having a shelf, of a pair of complementary slide leaves adapted to be positioned above said shelf to receive and temporarily support a load, a head, and means for elevating said head between said leaves to support the load as the leaves are withdrawn from supporting position.

4. The combination with a table having end sections and a depressed shelf, of a pair of slide leaves and actuating means therefor adapted to be positioned above said shelf to receive and support a load, a head having guide arms thereon and adapted to be elevated through said shelf and between said leaves, a stem on the head, and actuating means connected to said stem.

5. The combination with a table having elevated ends and an intermediate depressed shelf with openings therein, of a pair of boards having hinges at their outer ends and normally flush with said shelf, and independent means for tilting the inner free ends of said boards above the shelf.

6. The combination in a machine as described with a stationary shelf, of a slide leaf adapted to be positioned above said shelf to support a load and means for reciprocating said leaf, of a vertically reciprocable head and means for elevating said head to support said load when said leaf is withdrawn from supporting position.

7. The combination of a stack supporting device adapted to receive a sheet of paper, from a paper roll a shaft, a tiltable cutting frame supported on said shaft and adapted to guide a strip of paper from said roll to said device, and means on said frame for severing the sheet of paper.

8. The combination in a machine as described with a shelf having an opening therein and a groove in its upper surface, of a hinged board in said opening normally flush with said shelf and provided with

a groove forming a continuation of the first mentioned groove, and means for elevating the free ends of said board.

9. The combination in a machine as described with a shelf having spaced openings and a groove in the upper surface of the shelf between said openings, of a pair of hinged boards in said openings and pro-

vided with surface grooves alined with the groove in the shelf, and means for independently elevating the inner end of either board. 10

In testimony whereof I have affixed my signature.

WILLIAM B. MUNN.