

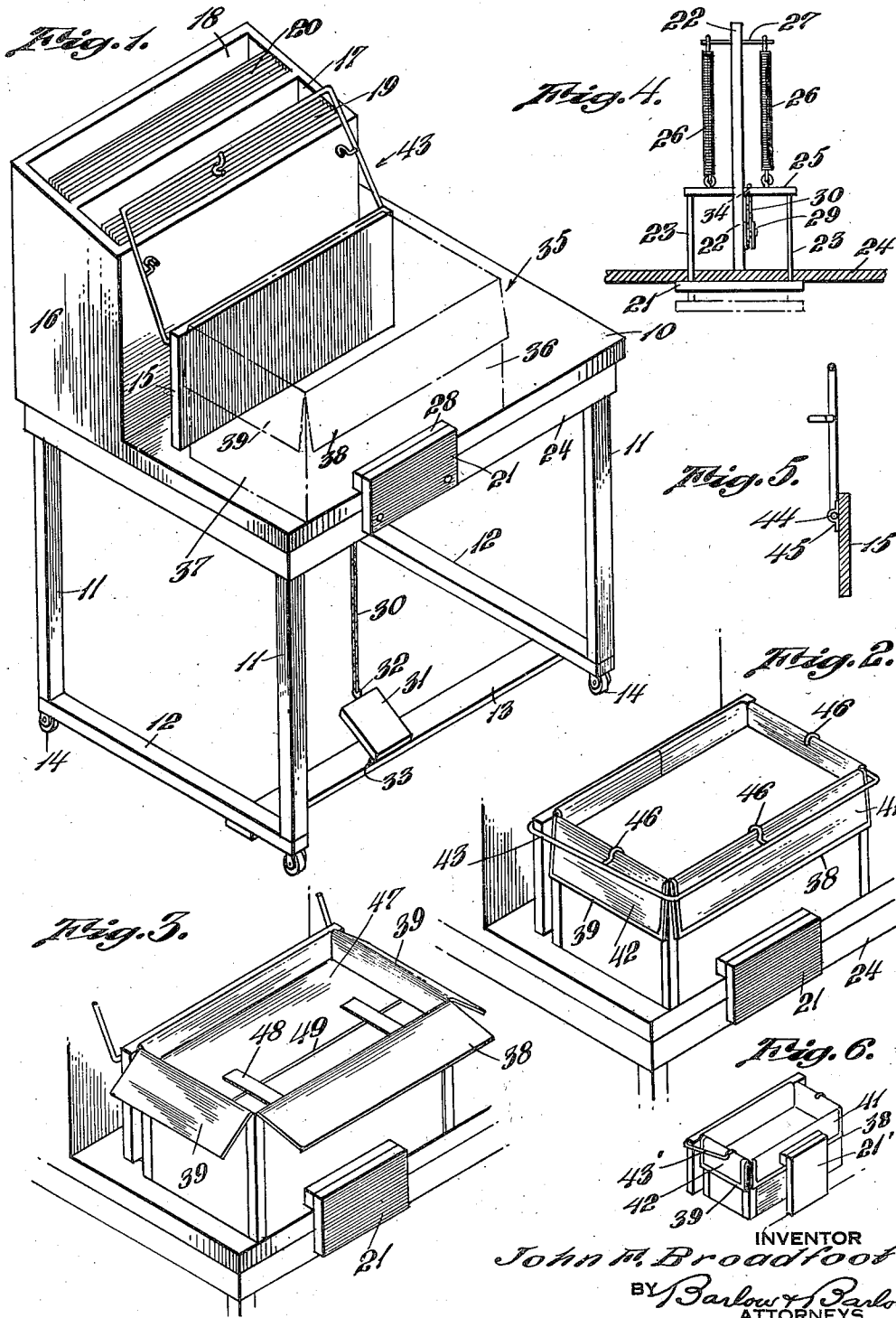
Nov. 16, 1943.

J. F. BROADFOOT

2,334,308

PACKAGE LOADING APPARATUS

Filed Nov. 29, 1941



UNITED STATES PATENT OFFICE

2,334,308

PACKAGE LOADING APPARATUS

John F. Broadfoot, Johnston, R. I.

Application November 29, 1941, Serial No. 421,030

5 Claims. (Cl. 228-19)

This invention relates to an apparatus for holding a package while loading the same with the contents which it is designed to carry and although it has general uses it is particularly adapted for use in connection with the packaging of clean laundry.

It is desirable in handling such articles as clean laundry to return the same to the customer in a box which will be symmetrical and attractive in shape and which will be of sufficient stiffness to not only maintain its shape but also to afford some protection for the laundry. Heretofore cardboard boxes or cardboard stiffening sheets have been utilized for such laundry packaging. This cardboard is relatively expensive from the standpoint of the material involved and also from the standpoint of performing the operations on the cardboard necessary for the formation of the cardboard into boxes, and in order to overcome the above I have provided a paper package for the laundry and to protect the paper package I use an outside cardboard box of substantial stiffness.

This invention has for its object to provide an apparatus to hold the outside stiff cardboard container and the paper which is to form the package so that the package may be easily and readily loaded with the contents or laundry which is to be delivered.

More specifically, the object of this invention is to provide an arrangement for holding the box in one position with holding means moved into engagement with the flaps of the box to hold these flaps in a position which will leave the top of the box free for loading.

Another object of this invention is to provide an easy, releasable means for gripping the box which may be operated by manual control.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a perspective view of the apparatus illustrating in dot and dash lines a package in position.

Fig. 2 is a perspective view of the package showing the outside cardboard box and the paper liner with the flap holding frame in position to hold the flaps for free loading of the box.

Fig. 3 is a perspective view illustrating the flaps of the liner folded into a closed position and secured in such position before the flaps of the outside box are closed.

Fig. 4 is a sectional view showing the operating

mechanism for the package holding means illustrating in dot and dash lines the release position of this holding means.

Fig. 5 is a fragmentary sectional view showing the mounting of the flap holding frame on the abutment.

Fig. 6 is a perspective view similar to Fig. 2 showing a modification.

In proceeding with this invention I have provided a supporting surface upon which the outside container for the package may rest with an abutment to assist in locating the package on the table and a slide for holding the package against the abutment. When the package is in such position I have arranged for flap holding means to move into engagement with the flaps of the box to hold the flaps back against the side walls of the box leaving the top free for loading of articles therein.

With reference to the drawing, 10 designates the table top which is supported by a plurality of legs, 11, secured together by bars 12 and a cross strip 13 all of which are supported on casters 14 so as to be movable from one position to another.

Upon this table top 10 I provide an upstanding abutment 15 of a height sufficient so that a flap of the box may be folded back against the side of the box and when moved to engage the abutment will be held between the abutment and the side of the box. The abutment is substantially the length of the box to be accommodated. Adjacent but in the rear of this abutment I provide a receptacle 16 with a compartment 17 for one size paper liner 19 and a compartment 18 for another size paper liner 20. As many different compartments may be provided as there are sizes of liner for different sized boxes.

A gripping jaw 21 is movable toward the abutment 15 by reason of its slidable mounting on guides 23 extending through the lip or front board 24 of the table. These rods 23 are secured together by a connecting element 25 and coil springs 26 are connected to this element and to a pin 27 fixed to the rail 22 beneath the table top 10. This jaw 21 is also equipped with a rubber face 28 for engagement with the box and for extending over the edge of the table 10 should the box be slightly narrower than the table, so as to grip the same. In Fig. 6 the jaw 21' is of a length to engage the box flaps when bent back.

A pulley 29 is mounted on the rail 22 of the table 10 while a flexible element such as a chain 30 extends over this pulley and couples the connecting element 25 and a treadle 31 as shown at

32. This treadle is hinged at 33 to the cross strip 13 and is normally maintained raised by contraction of the springs 26 at an angle to the horizontal. Thus when the foot is placed upon the treadle 31 and the treadle is swung about its hinge 33 the chain 30 will be moved downwardly at the location, 32 but horizontally at its location 34 where it attaches to the element 25. Thus this element and the rods 23 and the jaw 21 or 21' with its cushion face 28 will be moved away from the abutment 15 to release any box which it might engage.

In dotted lines in Fig. 1 I have illustrated a box 35 as resting upon the table top 10. This box has opposite side walls 36 and end walls 37 and also closure flaps, 38 and 39. Flaps 38 are folded outwardly to lie along the side walls 36 and the flaps 39 are folded outwardly to lie along the side wall 37. Liners which will be of a size to fit the box such for instance as the liner 20 will be placed within the box. This liner is of paper and is folded and sealed to provide a bottom wall. The side walls extend upwardly along the side walls 36 and 37 of the cardboard box 35 while the corner portions of this paper liner are slit and I fold outwardly the slit portion of this paper liner which portions are designated 41 and 42, see Fig. 2. Thus the flaps of the paper liner or bag lie outwardly along the cardboard flaps 38 and 39 as shown in Fig. 2. To hold these parts of the package in this relationship I have mounted a wire frame, 43 on the abutment 15 by hinging its ends 44 in the eyes 45, see Fig. 5, so that the frame will swing about a horizontal axis from the position shown in Fig. 1 to the position shown in Fig. 2. While this frame may itself be sufficient to hold the flaps of the box and the flaps of the liner or bag outwardly as shown in Fig. 2, I desire to provide hooks, 46 on this frame along its three sides to engage the folded back portion of the box along the folded lines as shown in Fig. 2. In Fig. 6 the jaw 21' is of a height to engage the flap 38 and 41 and thus the jaw and abutment hold the box and these side flaps between them. The side flaps 39 and 42 are held by a wire having only side arms 43' to engage these flaps on the other walls. The box and liner thus held present an unobstructed open top into which the articles to be contained in the box may be placed.

After the box has been loaded the frame 43 will be swung upwardly to the position shown in Fig. 1. The flaps of the liner or bag will be folded inwardly to provide a top wall for the package 47 as shown in Fig. 3 and sealing means such as gummed paper 48 will be moistened and placed across the edge 49 of the top wall so as to seal the package within the container. The flaps 38 and 39 are then folded in and a flexible strap secured about the container across the top and bottom to provide the package which is ready for delivery. The treadle 31 is depressed, the box released from its position and a fresh box is positioned and the treadle released for gripping the same for loading the next box.

I have illustrated one form of liner but two right angularly arranged strips of paper of the

correct length drawn from a roll at the side and a roll at the end of the box may also be used.

I claim:

1. A package loading apparatus comprising a support upon which the package may rest, an abutment for engagement with one side of the package, means engaging the other side of the package to move it against said abutment, and a frame to embrace the upper portion of the package swingably mounted on said abutment to swing into engagement with a plurality of the package flaps and move and hold the same in a position to afford greater access to the package for loading the same.

2. A package loading apparatus comprising a table top for supporting a package, an abutment to engage one side of the package, resilient acting holding means engaging the other side of the package to move it against said abutment, manually operable means swingably mounted on said abutment to swing into engagement with a plurality of the package flaps to move and hold the same in a position to afford greater access to the package for loading the same.

3. A package loading apparatus comprising a table top for supporting a package, an abutment to engage one side of the package, a jaw slidable toward and from the opposite abutment to engage or disengage the package and manually operable means to move said jaw, a frame to embrace the upper portion of the package and swingably mounted on said abutment to swing into engagement with a plurality of the package flaps to move and hold the same in a position to afford greater access to the package for loading the same.

4. A package loading apparatus comprising a support upon which the container to be loaded may rest, an abutment for engagement with one wall of the container, a frame adapted when in a horizontal position to engage the closing flaps of a container and hold them open, means for pivotally mounting said frame on a fixed part of the apparatus to be free to swing about its pivot from a position substantially above a horizontal to a position substantially below a horizontal, and means carried by the frame to engage the edge of the container thus interrupting its swinging movement and maintaining the frame in flap holding position.

5. A package loading apparatus comprising a support upon which the container to be loaded may rest, an abutment for engagement with one wall of the container, a frame adapted when in a horizontal position to engage the closing flaps of a container and hold them open, means for pivotally mounting said frame on the said abutment to be free to swing about its pivot from a position substantially above a horizontal to a position substantially below a horizontal, and means carried by the frame to engage the edge of the container thus interrupting its swinging movement and maintaining the frame in flap holding position.

JOHN F. BROADFOOT.