

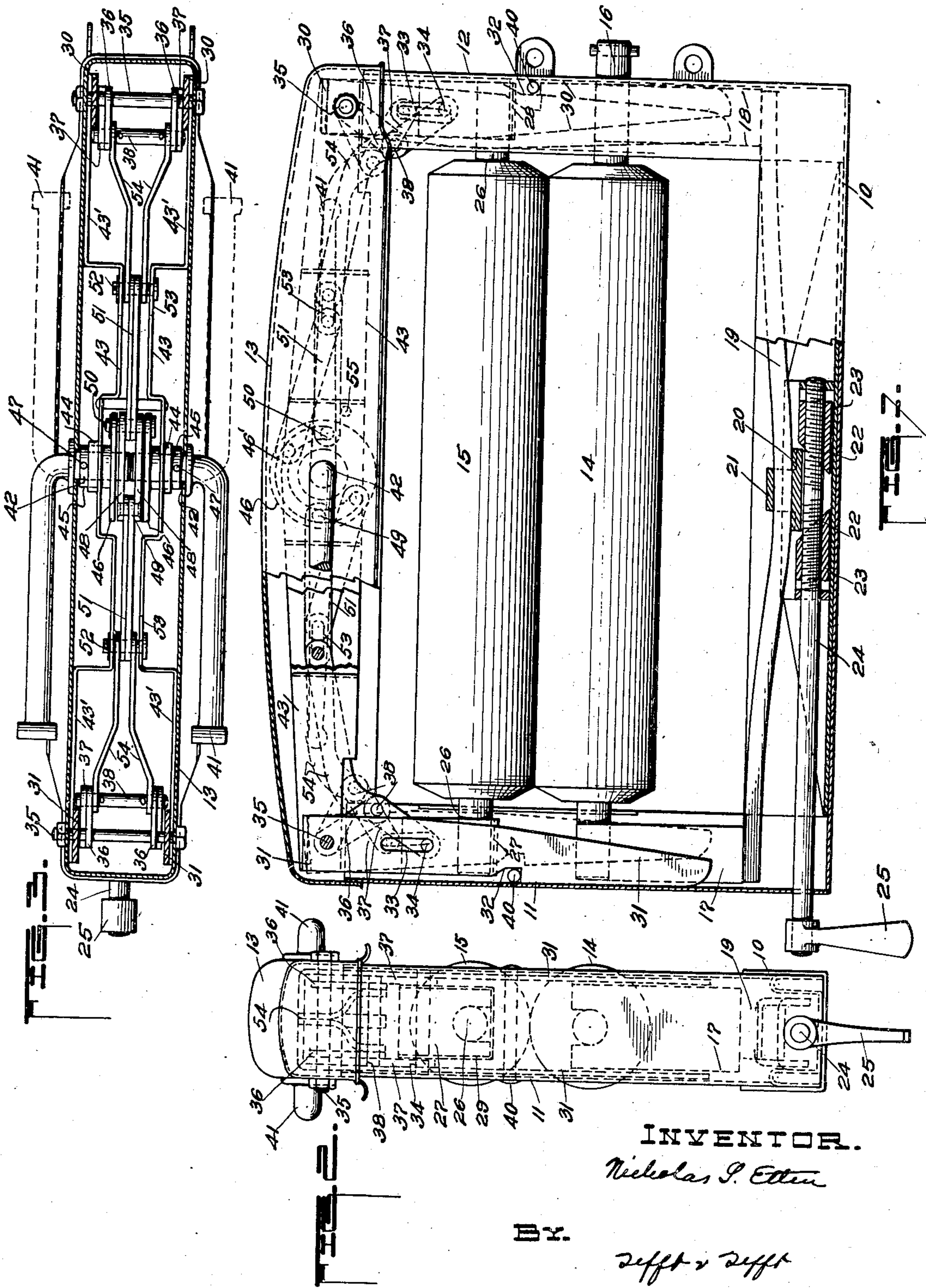
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N. L. ETTEN

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TOGGLE TOP WRINGER MECHANISM

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INVENTOR.
Nicholas P. Etten

BY.

2fft & 2fft

ATTYS.

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TOGGLE TOP WRINGER MECHANISM

Nicholas L. Etten, Waterloo, Iowa, assignor to
Chamberlain Corporation, Waterloo, Iowa

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This invention has reference to roll wringer mechanisms and is particularly directed to a novel release mechanism to be incorporated therewith.

5 An object of the invention is to provide a wringer mechanism having a release mechanism disposed in its upper portion and roll tensioning mechanism disposed in the lower portion, the release mechanism being so arranged that both
10 release and replacement operations are accomplished by manual movement of a single element.

Another object is to provide a release mechanism operable by slight manual movement of a single element.

15 A further object is to provide a single, manually movable bar on either side of the upper portion of the wringer in convenient position for use by an operator, by means of which the operator may instantly release the working pressure
20 between the wringer rolls or, when the same is in released position, may rearrange the mechanism in working position by a simple reverse movement of the same element.

Another object lies in the provision of a toggle-link mechanism disposed at either end of the
25 wringer to co-operate with both ends of the upper wringer roll in a uniform manner and a centrally disposed mechanism connected with the toggle-link mechanisms to control and operate the same
30 in a uniform manner whereby uniform working pressure throughout the length of the wringer rolls is maintained, the central mechanism adapted to operate the toggle-links in such a manner
35 that movement of the same in one direction brings about movement of the upper roll downwardly upon the lower roll while movement in the opposite direction brings about opposite or release
40 movement of the same and manual means for operating the central mechanism.

Other objects will appear in the following description and accompanying drawing in which:

Fig. 1 is a side elevational view of my wringer with certain portions broken away to permit
45 clearer view of underlying parts;

Fig. 2 is an end elevational view of the same taken from the left in Fig. 1 and

Fig. 3 is a plan view with certain parts shown in section to permit a clear view of portions of
50 the mechanism to be described.

Fig. 1 discloses my wringer as generally comprising a lower frame member 10 to which are attached upright, parallel end members 11 and 12 upon the upper ends of which rests a removable
55 transverse member 13.

Within the frame are disposed lower and upper wringer rolls 14 and 15.

Lower roll 14 is rotatably mounted, by means of a shaft 16 in bearing blocks 17 and 18 which are slidably mounted within the frame members 11 and 12.

Blocks 17 and 18 rest upon extending ends of a bar spring 19 which is supported at its central portion by a block 20, the latter having an upper portion 21 adapted to confine the spring while
10 the lower portion is fashioned to have oppositely disposed inclined surfaces 22 which rest upon complementally inclined surfaces of oppositely disposed block members 23.

The block members are slidably supported upon
15 the lower frame member 10 and are provided with holes having right and left hand screw threads.

Extending through the threaded portion of the blocks is a threaded bar 24 having threads fitting
20 those in the blocks.

Block 20 is cleared away in that portion adjacent the bar 24 and is thus vertically movable relative to blocks 23 and the frame.

It will be apparent that rotation of bar 24 in
25 one direction will bring about converging movement of the blocks 23 to move block 20 upwardly which movement will obviously force spring 19 upwardly to cause it to abut the blocks 17 and 18 with more or less force.

Thus the blocks, together with roll 14 are resiliently forced upward to bring about resilient pressure between the lower and upper rolls.

Fig. 1 indicates that bar 24 extends outwardly beyond the end frame and has a hand arm 25
30 secured to its outer end. By means of the hand arm the operator may rotate bar 24 to adjust the pressure between the rolls, through the mechanism described.

Upper roll 15 is rotatably mounted by means
40 of a shaft 26, in inverted bearing blocks 27 and 28. The shaft rests in grooves in the lower side of the blocks as shown and is prevented from leaving the grooves by band fixtures 29 covering the lower and side portions of the blocks. The blocks
45 are vertically movable in the frame whereby they, together with roll 15, may be pressed downwardly.

Extending downwardly, inside the frame members 11 and 12 and outside the bearing blocks, 50 are inverted U shaped members 30 and 31 which are notched at 32, for a purpose to be described, and have elongated openings 33 formed in each leg.

Bearing blocks 27 and 28 have pins 34 passing
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through them and the pins extend from either side of the blocks a sufficient distance to engage in the openings 33 of members 30 and 31. The pins are slidably fitted in the openings. By means of the arrangement described, the blocks are retained in members 30 and 31 in a vertically movable relation.

Members 30 and 31 are pivotally supported in frame member 13 by means of pins 35 which pass through the former and the walls of member 13.

Pivotally mounted upon pins 34 and 35 are link members 36 and 37 which are pivotally connected by pins 38.

Links 36 and 37 are so proportioned in length as to act as a toggle mechanism by means of which the blocks 27 and 28, together with roll 15, may be elevated or lowered.

Dotted outlines at the left in Fig. 1 indicate that when the pin 38 is moved outwardly the links move toward a position of alignment between pins 34, 38 and 35 which would be the position of greatest possible distance between pins 34 and 35, corresponding to the lowermost position of roll 15. Movement of pins 38 toward the center of the wringer would obviously result in pivotal movement of links 36 upon pins 35 as outlined at the left in Fig. 1 and relative folding and upward movement of links 37 to elevate blocks 27 and 28, together with roll 15.

It has already been noted that upper frame 13 is removable from the lower frame and that pins 35 are mounted in the upper frame.

In order to provide that downward vertical movement of roll 15, as brought about by the mechanism described, be effective to produce and maintain pressure between rolls 14 and 15 it is necessary that a means for locking the upper frame in position upon end members 11 and 12 be provided.

For this purpose I provide notches 32 in members 30 and 31. The lower lips of these notches are adapted to engage pins 40 which are secured in members 11 and 12 as shown.

The notches and pins described are obviously adapted to act as a latching means whereby the upper frame is locked in fixed position relative to the lower frame. Thus the pressure load between rolls 14 and 15 is carried by pins 35 and 40 through members 27 and 28.

However this latching means is only effective to hold the top frame in place when it is forcibly held in latched position, as will be apparent when it is observed that the pins 40, and the lips of notches 32 engaged therewith, are offset with respect to lines passing through pins 35 and lying parallel the end walls of frame 11.

With the parts in the solid line position at the left in Fig. 1, with member 31 unsupported, upward pressure on the top frame 13 will force the lip 32 to back away from the pin 40 and there will be no latch connection between the wringer frames.

The parts are so arranged that a part of any pressure applied on pins 35 tending to move them outwardly is distributed through pins 34 to members 31 and 32 to force them outwardly, whereby they are prevented from backing away as above noted, and the parts are held in latched relationship.

Further, it will be understood that with the pins 34 confined by slots 33 in members 30 and 31, initial outward movement of pins 38 is absorbed in moving members 30 and 31 toward the pins 40 and that no pressure is distributed to the rolls until the outward movement of mem-

bers 30 and 31 is arrested, after which the pins 34 are forced to follow the slots 33 in downward direction, thus forcing the rolls downward into pressure position.

It will now become apparent that with the top frame 13 in position on the lower frame, when pins 38 are forced outwardly, the rolls will be forced downwardly in opposition to spring 19 while at the same time pressure will be applied to members 31 to hold them latched, thus holding the top frame in fixed position on the lower frame. On the other hand, if pressure is removed from pins 38, the rolls will be free to move upward responsively to spring 19 and at the same time the supporting pressure on members 31 will be removed so that the lips 32 may escape from pins 40 and the top frame will be free to move with respect to the lower frame.

Bearing in mind that identical movements of the parts shown at the right in Fig. 1 take place simultaneously with those just described, it will be clear that the escape movement will result in release of frame 13 from uprights 11 and 12 with the final result that roll 15 is no longer held in abutment with roll 14, and that frame 13, together with attached mechanism and roll 15 may be removed from the lower frame. The utility of the described mechanism will be explained shortly.

To produce inward and outward movements of pins 38, I provide a mechanism as follows:

Reference to Fig. 3 will disclose angulated hand bars 41 disposed upon either side of frame 13, each having a shank portion 42 extending within the frame. The shank portions are rotatably mounted in the side walls of the frame and are further supported and journaled in a supplementary interior frame structure comprising members 43 which are so fashioned that their end portions 43' lie adjacent the side walls of frame 13 where they are supported upon pins 35.

Members 43 have flanged openings at 44 which are so proportioned as to rotatably receive elongated hub portions 45 of disk members 46. The disks are secured to shank portions 42 by means of pins 47.

Additional disks 48 are supported on the shank portions adjacent the disks 46 and have a pin 49 joining them at an off central position.

An oppositely disposed pin 50 passes through disks 46 and 48, thus forming a connection between disks 46 and the shanks of hand bars 41 whereby the assembly operates as a unit.

Pivotally mounted upon pins 49 and 50 are outwardly disposed link members 51 having their outer ends supported by pins 52 which slide in slots 53 formed in members 43.

Angulated link members 54 are pivotally connected with links 51 and 36 by pins 52 and 38.

Disks 48 are provided with slots 48' extending substantially 180 degrees in the disks, and pin 50 operates in these slots. The slots are so disposed that when arms 41 are disposed as shown in solid lines, and pin 50 is disposed toward the right, the end of the slot is engaged with the pin in such position that continued counterclockwise rotation of the arms would force the pin upward.

It will be noted that when the parts are in locked position the pins 49 and 50 rest somewhat beyond a dead center position with respect to the pins 52 and shanks 42, and that a pin 55, secured in members 54, forms an abutment adapted to prevent movement of arms 41 and mechanism beyond the position noted.

With parts in the latter described position it will be obvious that a slight downward manual pressure applied to the end of arm 41 will bring about counterclockwise movement of pin 50, and through this, disks 48 to displace both pins out of their pre-center position and allow their continued rotation to unlock the mechanism as formerly described.

During the above described release movement the pin 50 moves in the slots 46', and finally arrives in position adjacent the opposite ends of the slots.

It will be apparent that the mechanism may be easily re-assembled into locked position by pressing downwardly upon frame 13 while at the same time urging the arm 41 in clockwise direction whereby roll 15 is forced downwardly upon roll 14, notches 32 are positioned opposite pins 40 and members 27 and 28 are forced outwardly against the pins in such a manner as to force them into hooked engagement therewith. Final rotation of the hand arm to the limit of its movement, as controlled by pin 55, replaces the linkage in position where the force of spring 19 is opposed by the pins 49 and 50.

After the locking operation is completed, arms 41 are returned toward the left to the solid line position and they are then available to release the mechanism as above explained.

What I claim is:

1. A roll wringer mechanism having in combination a frame comprising a lower frame member, end members secured thereto and a separable top frame member, upper and lower rolls supported in said frame in a vertically movable manner, spring tensioning means disposed in the lower frame member co-operative with the lower roll to force the same upward, mechanism disposed in the upper frame member co-operative with the end members to lock the upper frame in position upon the lower frame comprising depending members supported in the upper frame member and pivotally movable relative thereto, the same having latching connection with portions of the end frame members so arranged that pivotal movement of the depending members brings about latching or unlatching movement thereof, laterally movable wringer roll supporting members supporting the upper roll disposed adjacent the depending members, means connecting said support members and depending members in such a manner that the depending members are pivotally movable in accompaniment with lateral

movement of the support members which are vertically movable independently of the depending members, whereby lateral movement of the support members brings about the aforementioned pivotal latching movement of the depending members and manual means connected with said support member for moving the same laterally and vertically to simultaneously bring about vertical movement of the roll and pivotal movement of the depending members.

2. In a clothes wringer, a lower frame, an upper frame, a pair of cooperative rolls in said lower frame, slidable latch members pivotally attached to the top frame extending downward into the lower frame, toggle mechanism attached to said latch and top frame and upper roll bearing blocks to apply and release roll pressure, and a U-shaped lever for said toggle mechanism rotatably mounted transversely in the top frame with handles extending parallel to the top frame whereby the wringer is operable in the same manner from either side.

3. In a clothes wringer, a lower frame, an upper frame, a pair of cooperative rolls in said lower frame, slidable latch members pivotally attached to the top frame extending downward into the lower frame, toggle mechanism attached to said latch and top frame to apply and release roll pressure, and a U-shaped lever for said toggle mechanism transversely rotatable in the top frame with handles extending parallel to the top frame operable by pivotal movement in one direction to actuate the toggle mechanism to slightly over center locked pressure position, then by a lost motion device to return the lever by reverse movement to its original position where it is operable by further reverse movement to force the toggle mechanism backward past center position whereby the roll pressure is released.

4. In a clothes wringer, a lower frame, an upper frame, a pair of cooperative rolls in said lower frame, slidable latch members pivotally attached to the top frame extending downward into the lower frame, to act as vertical guides for the top frame, toggle mechanism attached to said latch and top frame to apply and release roll pressure, and a toggle actuating lever pivotally attached to the top frame operable in one direction to force the latches into locked position in the lower frame and by reverse movement to release the latch members and permit the top frame to move upward to pressure released position.

NICHOLAS L. ETTEN.