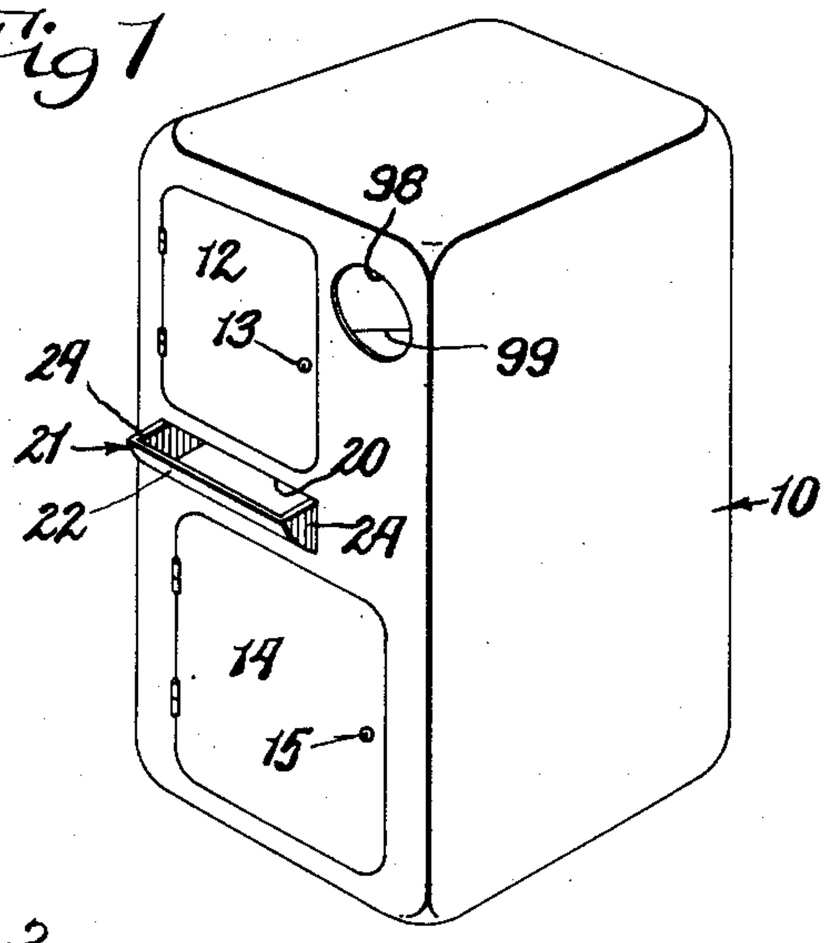
Sept. 29, 1953 H. E. DOSBERG 2,653,693

APPARATUS FOR DISPENSING CLOTH TOWELS

Filed Feb. 24, 1949

4 Sheets-Sheet 1

Fig 1



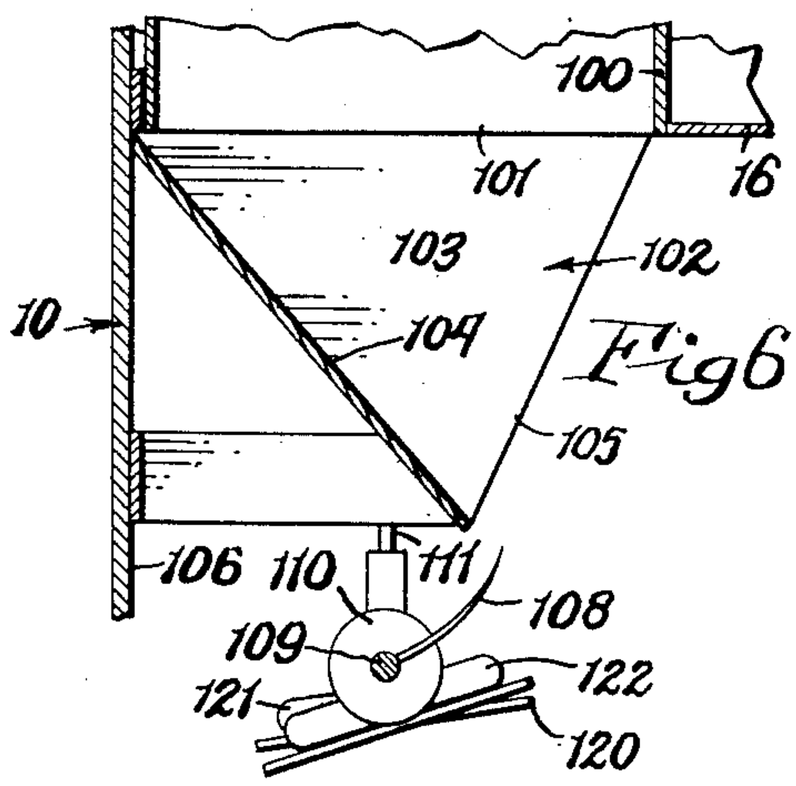


Fig 6

Fig 2

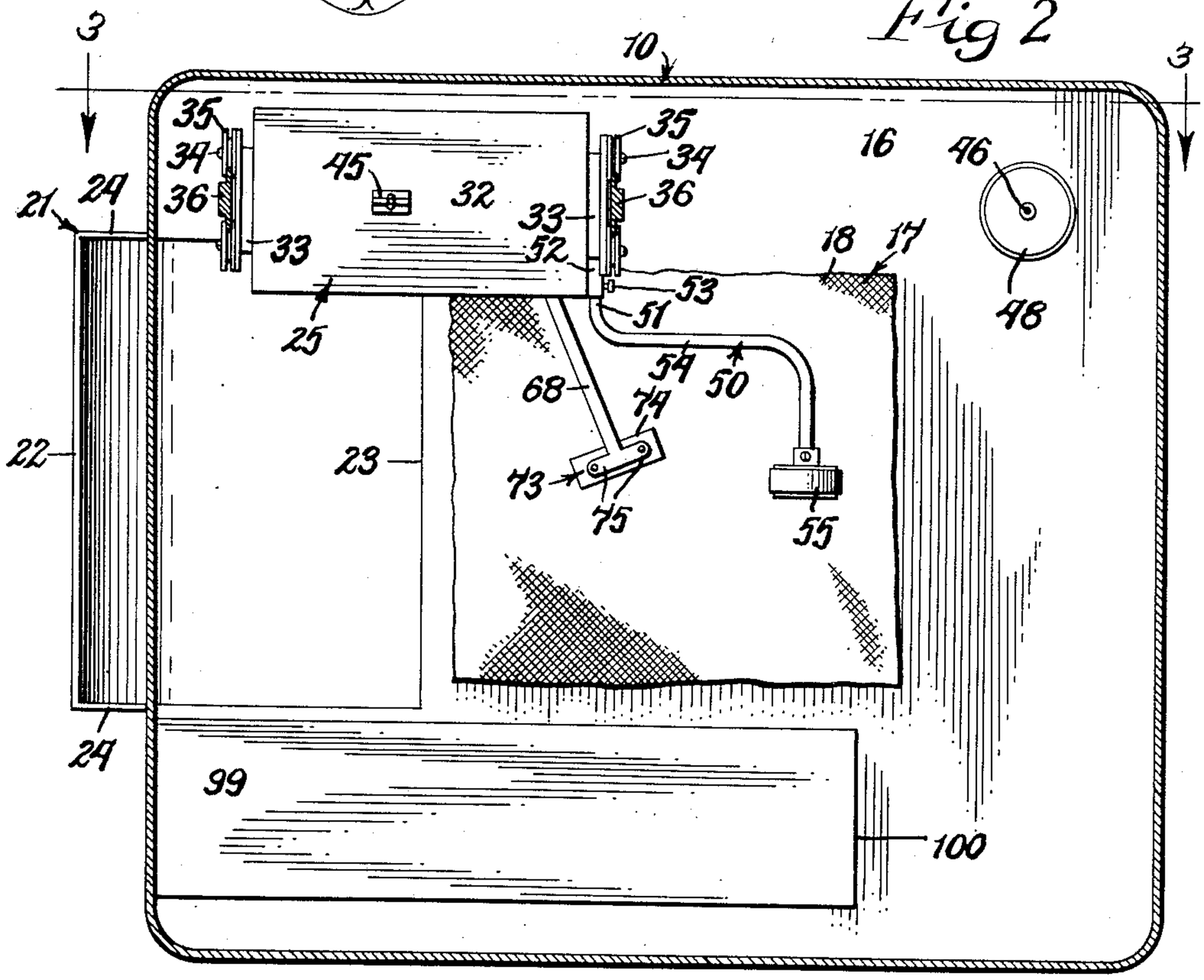


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Fig 3

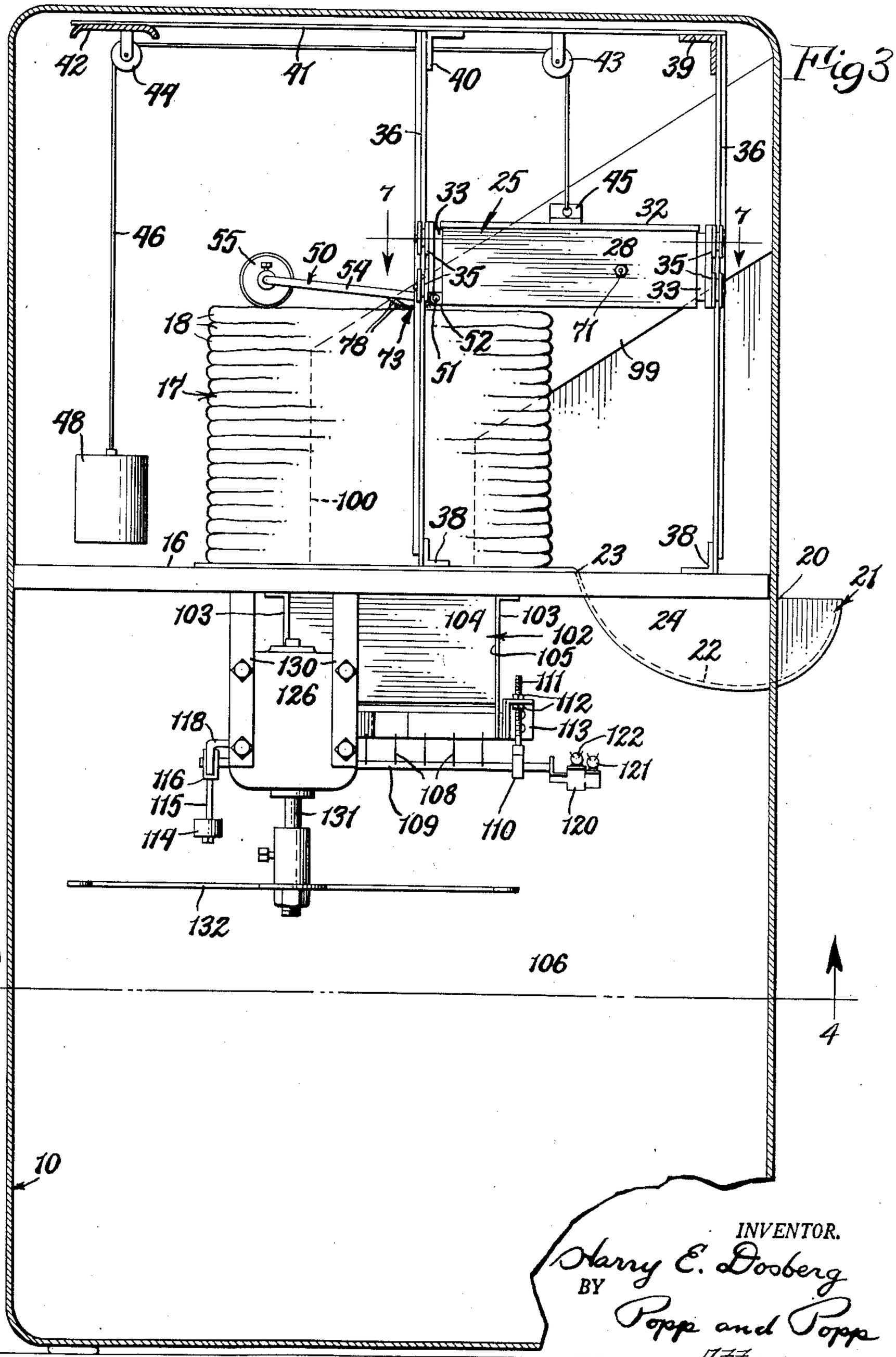

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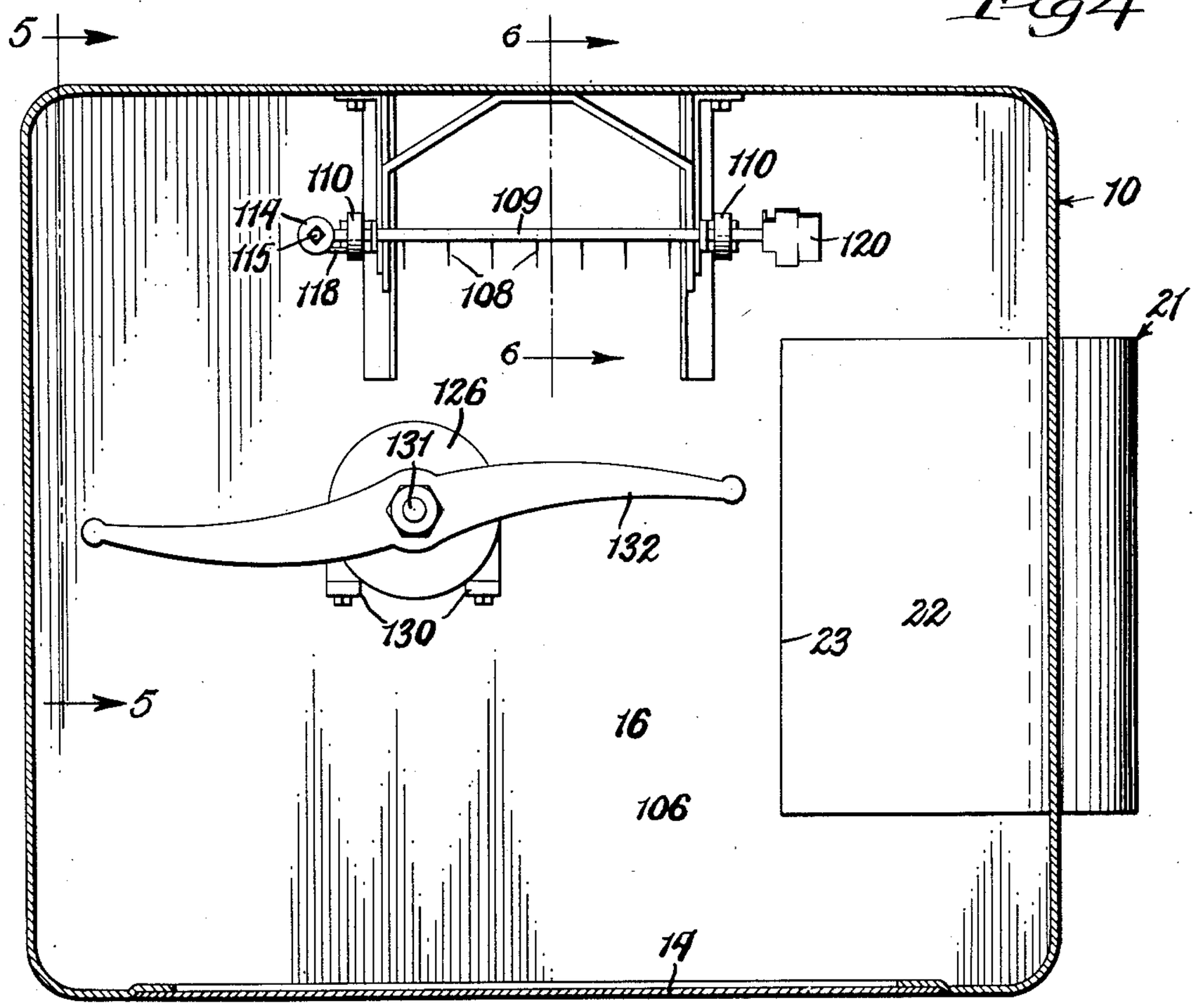
Fig 4



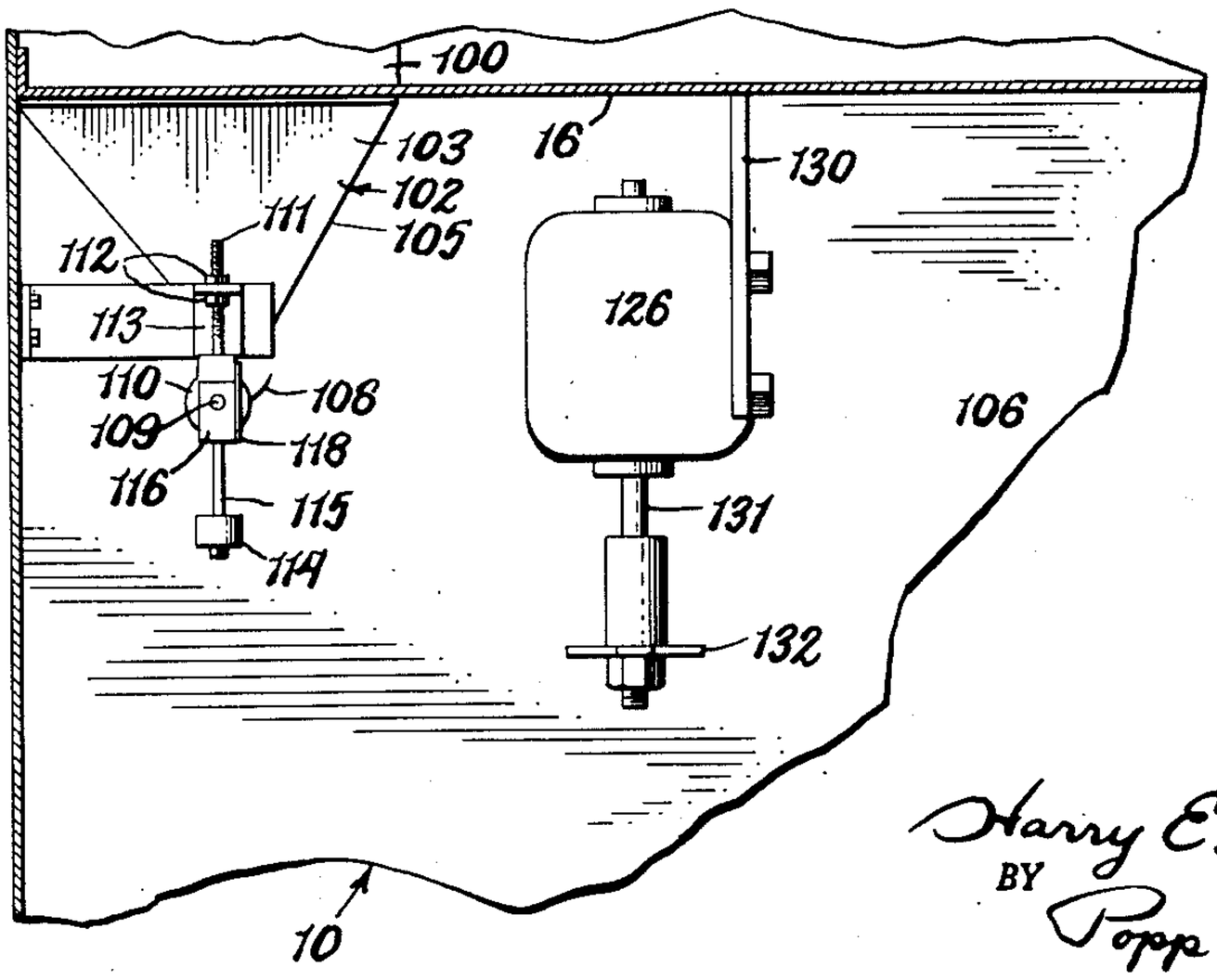


Fig 5

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Fig 7

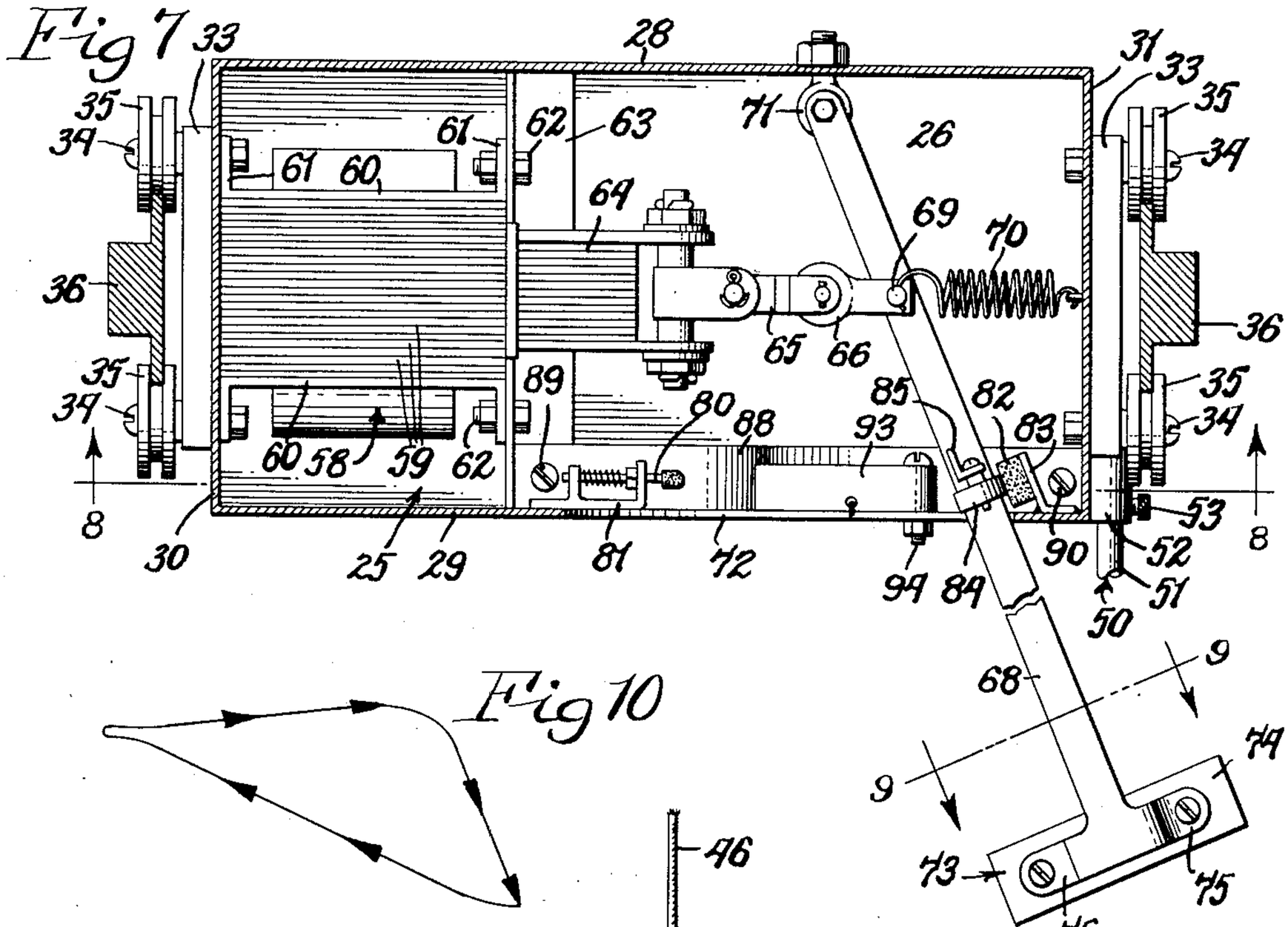

Fig 10

Fig 8

Fig 9

Fig 11

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UNITED STATES PATENT OFFICE

2,653,693

APPARATUS FOR DISPENSING CLOTH TOWELS

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Application February 24, 1949, Serial No. 78,093

9 Claims. (Cl. 194—4)

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This invention relates to apparatus for dispensing cloth towels and more particularly to apparatus for dispensing individual cloth towels one at a time from the top of a pile of such towels, the dispensing apparatus being particularly applicable for use in factories where such towels are supplied to the workers.

This application is a continuation in part of my copending application Serial No. 729,376, filed February 18, 1947, now Patent No. 2,572,121, for Apparatus for Dispensing Towels, and which is actuated by the return of a soiled towel thrown into an opening in the dispenser so as to insure the return of a soiled towel for each clean towel dispensed and thereby minimize the loss of towels.

In common with my said application, important objects of the present invention are to provide such a dispensing apparatus which will operate in conjunction with a pile of individual cloth towels and which will reliably deliver one towel at a time which will not be affected by the condition of the towels, that is, whether the towels are new, patched, or worn threadbare; which operates rapidly so that a single dispenser can be used to serve a large group of workers; which will not injure the towels being dispensed; which serves as a pilfer-proof receptacle for the soiled and cleaned towels; in which the workers are not required to handle anything but the towels themselves to actuate the apparatus; which is quiet in operation; and which is simple, inexpensive, and stands up under conditions of severe and constant use without getting out of order or requiring repairs.

With the apparatus forming the subject of my said patent application, it was found that it could be operated by throwing a crumpled mass of waste paper, a block of wood or the like into the opening designed to receive a soiled towel. This partially defeated the principal object of the apparatus which was to dispense a fresh towel only upon the return of a soiled towel. Accordingly, a specific object of the present invention is to provide such apparatus which can only be operated by throwing into the apparatus a limp piece of cloth made of soft woven fibers and in particular will not be operated by a wad of waste paper, a block of wood or anything not having the characteristics of a used towel.

Also in the apparatus forming the subject of my said patent application, soiled towels would pile up in a pyramid in the soiled towel compartment, thereby requiring a larger compartment to hold the same amount of soiled towels. A specific object of the present invention is to provide means for distributing the soiled towels thrown into the apparatus so that they are piled uniformly throughout the same and thereby permit the apparatus to be provided with a smaller used towel compartment as compared with the structure shown in my said patent application.

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Another object of the present invention is to simplify, as compared with the structure shown in my said patent application, the mechanism for indexing the height of the arm which strips the uppermost towel from the pile of fresh towels, this indexing being necessary in order that the stripper arm follow the progressively descending height of the pile of fresh towels.

Other specific objects and advantages of the present invention will appear from the following description and drawings in which:

Fig. 1 is a diminutive perspective view of the cabinet housing the towel dispenser embodying the present invention.

Fig. 2 is a fragmentary horizontal section taken through the upper part of the cabinet shown in Fig. 1.

Fig. 3 is a vertical, fragmentary fore-and-aft section taken on line 3—3, Fig. 2.

Fig. 4 is a horizontal section taken on line 4—4, Fig. 3 looking upwardly.

Fig. 5 is a fragmentary vertical section taken on line 5—5, Fig. 4.

Fig. 6 is an enlarged fragmentary vertical section taken on line 6—6, Fig. 4.

Fig. 7 is an enlarged fragmentary horizontal section through the casing for the towel stripper mechanism, this section being taken generally on line 7—7, Fig. 3.

Fig. 8 is a fragmentary vertical section taken generally on line 8—8, Fig. 7.

Fig. 9 is a vertical fragmentary section taken on line 9—9, Fig. 7.

Fig. 10 is a diagram showing the path followed by the stripping or dispensing member in stripping the uppermost towel from a stack of towels and delivering the same to the receiver.

Fig. 11 is a wiring diagram of the electrical components of the apparatus.

The towel dispenser is shown as embodied in a casing 10 which can be of any suitable form and which encloses the operating mechanism as well as being a receiver for the fresh and soiled towels. The front wall of this cabinet or casing is shown as having in its upper part a door 12 provided with a lock 13 through which access can be had to the upper part of the cabinet and also as having a door 14 provided with a lock 15 through

which access can be had to the lower part of the cabinet. The upper door 12 permits of replenishment of the supply of fresh towels and the door 14 permits of the removal of the soiled towels, and both doors provide ready access to the operating mechanism, to permit repair or adjustment thereof.

A horizontal partition or shelf 16 is provided within the cabinet between the two doors 12 and 14 and about midway of the height thereof, this shelf carrying a pile 17 of the individual cloth towels 18 which the apparatus dispenses.

Slightly below the level of the partition 16 and intermediate the doors 12 and 14, the front wall of the cabinet is provided with a horizontal opening 20 and in this opening is arranged a receiver 21. This receiver is shown as comprising a curved sheet of metal 22 which is arranged both on the interior and exterior of the cabinet, the inner extremity of this sheet of metal terminating at the inner edge of an opening 23 provided in the partition 16 at its front end. The sides of the receiver 21 are formed by sheet metal side walls 24 which are secured to the opposite curved edges of the curved metal sheet 22 and also are secured to the partition 16 adjacent the side edges of the opening 23 therein. It will be seen that a towel 18 removed from the top of the pile 17 and flung toward the opening 23 in the partition 16 will be accessible to the user, it being merely necessary for the user to reach into the receiver 21 and seize the towel.

The towels are stripped, one at a time, from the top of the pile 17 and for this purpose a stripping or dispensing mechanism, indicated generally at 25 is provided, this mechanism also including an indexing member whereby the dispensing or stripping arm is always held at the right height to engage and dispense the uppermost towel of the pile. This dispensing mechanism includes a rectangular casing comprising a bottom wall 26, side walls 28 and 29, and end walls 30 and 31, the casing being shown as enclosed by a removable cover 32. To the exterior of each of the end walls 30, 31 is secured a generally square block 33, each of these blocks being secured at its four corners by four bolts 34 on the outer end of each of which a grooved roller 35 is rotatably mounted. Each group of these rollers 35 engages the edge of a vertical track 36. These tracks are arranged in parallel relation at one side of the casing and are shown as secured at their lower ends by a pair of brackets 38 carried by the horizontal partition or shelf 16 and at its upper end one of these tracks is secured to an angle bar 39 extending across the front of the casing near the top wall thereof and the other vertical track is secured to a bracket 40 secured to a fore-and-aft metal strap 41. This strap 41 is secured at its front end to the transverse front angle bar 39 and at its rear end to a cross plate 42 which extends across the interior of the cabinet at the rear end thereof near its top wall.

Means are provided for partly counterbalancing the weight of the dispensing mechanism 25 and to this end a pulley 43 is carried by the fore-and-aft strap 41 above the center of the dispensing mechanism 25 and a pulley 44 is suspended from the cross plate 42. The cover 32 is provided with an upstanding bracket or eye 45 to which is secured a counterweight cable 46, this cable extending over the pulleys 43 and 44 and having a counterweight 48 at its opposite end.

The dispensing mechanism 25 is always maintained at the proper elevation, regardless of the height of the pile 17 of towels, to strip the uppermost towel 18 therefrom. For this purpose an indexing arm 50 is adjustably secured to the end wall 31 of the dispensing mechanism casing, this arm comprising a horizontal end 51 inserted into the horizontal bore of a holder 52 and adjustably held against rotation therein by a set screw 53. The intermediate part 54 of the indexing arm is arranged at right angles to its attaching portion 51 and its outer end is arranged parallel with this attaching portion 51 so that this arm is generally crank shaped. This arm is disposed in a generally horizontal plane and its outer end carries a roller 55 which rests upon the uppermost towel 18 of the pile 17 of these towels. It will be seen that the height of the dispensing mechanism 25 relative to the height of the pile 17 of towels can be readily adjusted by loosening the set screw 53 and adjusting the relative height of the indexing roller 55 in relation to this dispensing mechanism 25.

The dispensing mechanism 25 includes a solenoid 58 having laminations 59 and vertical side plates 60, each of these side plates being provided with vertical flanges 61 along its front and rear edges. One pair of these vertical flanges 61 is secured to the casing end wall 30 by the same group of four bolts 34 which mount the corresponding square block 33 and rollers 35. The opposite flanges 61 are secured at their lower ends by a pair of bolts 62 to an angle bar 63 secured to the bottom wall 26 of the enclosing casing and extending transversely thereof. The movable core 64 of this solenoid is secured by a pair of links 65 and 66 to the central portion of a sweep arm 68, the connection between this sweep arm 68 and the link 66 being through a vertical pivot pin 69. The core 64 is normally held in its extended position shown in Figs. 7 and 8 by a helical tension spring 70 connecting the pivot pin 69 with the end wall 31 of the casing. One end of the sweep arm 68 is pivotally connected to a screw eye 71 fastened to the wall 28 of the casing, this connection being such as to permit both vertical and horizontal movement of the sweep arm. The other end of this sweep arm 68 extends through a slot 72 in the wall 29 of the casing and projects outwardly from the casing to a position above the pile 17 of the towels. At its outer end this sweep arm 68 carries a dispensing member indicated generally at 73.

As best shown in Figs. 7 and 9 this dispensing member 73 is in the form of an elongated block 74 secured to a pair of ears 75 at the end of the sweep arm 68 to extend tranversely and having a convex under face to which is secured a facing 76 having a plurality of short needle-like bristles 78 projecting downwardly therefrom. These bristles are sufficiently long to interengage with the fibers of the uppermost towel 18 of the pile of towels 17 to strip this towel off the pile.

Stops are provided for limiting the movement of the sweep arm 68 in both directions, particularly in its movement, when the solenoid 58 is energized, toward the receiver 21 to jar and shake the towel from the bristles 78 and to fling the towel into the receiver. In this operative movement of the sweep arm 68 caused by the energization of the solenoid 58, this stop is provided by the cushioned head of a spring loaded bumper pin 80 which is mounted for sliding movement in the direction of impact from the sweep arm 68 in the arms of a U-shaped bracket

81 which is attached to the wall 29 adjacent the corresponding end of the slot 72. In the return direction of the sweep arm 68, this stop is provided by a resilient pad 82 fast to a bumper plate 83 which is in turn welded or otherwise suitably secured to the side wall 29 at the opposite end of the slot 72. Instead of having direct engagement between the sweep arm 68 and these stops 80, 82, these stops are preferably engaged by a roller 84 mounted on the sweep arm 68, the sweep arm having for this purpose an upstanding arm 85 on which this roller 84 is mounted.

A track and switch are provided for guiding the sweep arm 68 to cause the dispensing member 73 to follow the path shown in Fig. 10. To this end a track bar 88 is secured to the bottom 26 of the casing by a pair of bolts 89 and 90 extending through its opposite ends, this track bar being arranged against the side wall 29 of this casing under the slot 72. As viewed in Fig. 8, the right hand end of this track bar 88 is at a low elevation and from this end the track bar inclines upwardly to its elevated left hand end. The sweep arm 68 rests on and is guided by this track bar, having for this purpose a depending strut or leg 91 carried by an outboard roller 92 riding on this track bar. In riding up the incline of this track bar 88, this roller passes under and lifts the free end of a track switch 93. This track switch is supported by a pivot pin 94 secured to the side wall 29 of the casing and which projects across the track bar 88 so that the free end of this track switch 93 is normally in engagement with the elevated end of the track 88 and is capable of rising to the dotted line position shown in Fig. 8. A helical tension spring 95 yieldingly holds the free end of the track switch 93 down against the elevated end of the track bar 88, as shown by full lines in Fig. 8. While this helical return spring 95 passes through the track bar 88, it will be understood that this is not in the path of movement of the roller 92 carrying the sweep arm 68.

A feature of the invention resides in the necessity for returning a soiled towel in order to obtain a fresh towel. To this end the front wall of the cabinet 10 is provided with an opening 98 in its upper right hand end as viewed in Fig. 1, this opening leading to the upper end of an inclined tubular chute 99, the upper end of which is fastened to the rear of the front wall of the casing 10 in register with this opening 98. This chute inclines rearwardly and downwardly from the opening 98 along the corresponding side wall thereof and at the approximate center of the casing is provided with a vertical leg 100 which extends down and is secured to the horizontal partition 16 in register with an opening 101 therethrough.

Below this opening 101 an inclined chute 102 is secured in any suitable manner to the underside of the horizontal partition 16, this chute comprising a pair of triangular end walls 103 connected along a corresponding pair of edges by an inclined bottom wall 104, this bottom inclining downwardly toward the center of the casing and toward the open side 105 of the chute. The towels thrown into the opening 98 thereby pass through the inclined and vertical legs 99 and 100 of the tubular chute and through the opening 101 onto the inclined bottom wall 104 of the chute 102 and are directed thereby toward the center of the compartment 106 in the bottom of the casing 10. The soiled towels are removed from this compartment through the door 14.

In sliding down over the lower edge of the inclined bottom 104 of the chute 102 the soiled towel engages the curved tines 108 secured to a rock shaft 109. As best shown in Figs. 3–6, this rock shaft is arranged below and parallel with the lower edge of the inclined bottom wall 104 of the chute 102 and is supported in a pair of bearings 110 each of which is mounted for vertical adjustment at the lower end of a vertical screw 111. For such adjustment each of these screws is provided with a pair of nuts 112 which engage opposite sides of a supporting bracket 113. It will be seen that either end of the rock shaft 109 can be adjusted up or down with reference to the horizontal edge of the chute bottom 104 by adjustment of the corresponding pair of nuts 112.

The tines 108 curve upwardly so that their pointed ends are in the path of and oppose the movement of the soiled towel from the horizontal edge of the chute bottom 104. Accordingly these tines catch in the fibers of each passing cloth towel and the towel rocks the rock shaft 109 clockwise as viewed in Fig. 6. After the towel has passed, the rock shaft 109 and its tines 108 are returned to normal position by a depending counterweight 114 secured to the rock shaft. This counterweight is shown as carried at the lower end of a rod 115 fast to a rectangular block 116 secured to one end of the rock shaft 109. A stop is provided to insure the return of the rock shaft and tines to normal position, this stop being shown as comprising an upstanding finger 118 on the rectangular block 116 and which engages the corresponding side of the adjacent bearing 110 when the rock shaft and its tines are returned to normal by the counterweight 114.

Mounted on one end of the rock shaft 109 is a sheet metal bracket 120 which carries a pair of electric switches 121 and 122. Each of these switches is in the form of an elongated glass capsule containing a globule of mercury which, on tipping the capsule in a corresponding direction, rolls into engagement with a pair of electrical contacts extending through the glass capsule. The capsules are generally radially disposed with reference to the rock shaft 109 and in the normal position of the rock shaft the globules of mercury are disposed at the dead ends of the capsules. The capsules are also arranged slightly out of phase with each other, that is, at different angles, so that the switch 121 closes slightly in advance of the switch 122 when the rock shaft 109 is actuated as previously described.

This switch 121, as shown in the wiring diagram, Fig. 11, has one of its contacts connected with one side 124 of a main power line and its other contact connected through a wire 125 with a motor 126 the other terminal of which is connected with the other side 128 of the main power line. The delayed switch 122 has one of its contacts connected with the side 124 of the main power line and its other contact connected, through a line 129, with the winding of the solenoid 58, the other end of this winding being connected to the other side 128 of the main power line. It will be seen that when the rock shaft 109 is actuated by a passing towel the mercury switches 121 and 122 are progressively actuated to first energize the motor 126 and then the solenoid 58.

The motor 126 is carried by hangers 130 so that its shaft 131 is vertically disposed, the hangers 130 being suspended from the horizontal partition or shelf 16 and being arranged adjacent

the chute 102. The lower end of the motor shaft 131 carries a double bladed impeller 132, this impeller sweeping below the horizontal discharge edge of the chute bottom 104 and serving to engage the soiled towels delivered by the chute 102 and fling them around so as to distribute them uniformly around the soiled towel compartment 106 instead of permitting them to build up in a pyramid.

In the operation of the towel dispenser the user reaches into the forwardly projecting part of the receiver 21 and removes a fresh towel therefrom. After using the towel he throws the soiled towel through the opening 98 into the inclined leg 99 of the tubular chute. The soiled towel passes through the vertical leg 100 of this chute onto the inclined bottom 104 of the chute 102. On sliding off the lower horizontal edge of this inclined chute bottom 104, the fibers of the soiled cloth towel engage the tines 108 on the rock shaft 109 and rock this rock shaft in a clockwise direction as viewed in Fig. 6 against the urging of its counterweight 114. The tines 108 swing to release the soiled towel, the counterweight returning the rock shaft 109 and its tines 108 to their normal position determined by the stop 113.

This rocking of the rock shaft 109 serves initially to close the mercury switch 121 mounted radially thereon, the glass capsule of this switch rocking so that the globule of mercury therein rolls into engagement with its two contacts. This establishes a circuit from the side 124 of the main power line, wire 125, and motor 126 to the other side 128 of the main power line. The energization of the motor 126 causes its impeller 132 to revolve and since at this time the soiled towel is sliding over the horizontal discharge edge of the inclined chute bottom 104, the soiled towel is struck by the impeller 132 and forcibly flung across the soiled towel compartment 106. Since the impeller 132 comes to rest at different positions the effect of this impeller is to distribute the soiled towels uniformly around the soiled towel compartment 106 and thereby prevent the towels from building up in a pyramid and thereby be wasteful of space and require a larger soiled towel compartment to be provided to accommodate the same quantity of soiled towels.

The further rocking of the rock shaft 109 by engagement of the returned soiled towel with its tines 108 closes the mercury switch 122, the globule of mercury in the glass capsule of this switch rolling into engagement with its contacts. This establishes a circuit from the side 124 of the main power line, closed mercury switch 122, wire 129 and winding of relay 58 to the other side 128 of the main power line.

This energization of the solenoid 58 draws its core 64 inwardly thereby, through the linkage 65 and 66, rapidly moving the sweep arm 68 toward the left as viewed in Fig. 7 and against the resistance of its return spring 70. The sweep arm 68 is at this time arranged with the bristles 78 of its dispensing member 73 in interengaging contact with the uppermost towel 18 of the pile of fresh towels 17 and it will therefore be seen that the horizontal movement of the sweep arm 68 through power derived from the solenoid 58 effects a horizontal action of the dispensing member 73 against the uppermost towel 18 and which tends to strip this uppermost towel from the pile 17 of fresh towels. However, such stripping of the uppermost towel 18 from the top of the pile 17 also requires an upwardly inclined movement of the dispensing member 73 in travelling from right to left as viewed in Fig. 7. To effect such inclined movement the sweep arm 68 is supported by the roller 92 which rides on the track bar 88 and this track bar is inclined so that in its horizontal dispensing movement the dispensing member 73 also moves upwardly. This path of movement of the dispensing member is indicated by the lower curve of Fig. 10.

The solenoid 58, when energized, moves the sweep arm 68 at a high rate of speed in so causing the dispensing member 73 to follow the path indicated by the lower curve of Fig. 10. This movement is abruptly stopped by engagement of the roller 85 of the sweep arm 68 with the head of the spring loaded stop pin 89. This stop pin is arranged to stop the sweep arm 68 at the left hand end of the path shown in Fig. 10 and in this position (Fig. 2) the dispensing member 73 is arranged over the opening 23 below which the receiver 21 is arranged. The fresh towel stripped from the top of the pile 17 is therefore swept over the receiver 21 and the abrupt stopping of the sweep arm 68 by the spring loaded stop pin 89 serves to violently release the towel from the birstles 78 of the dispensing member 73 and fling this towel into the receiver 21. This towel is available for the next user, which is the condition assumed at the start of the description of the operation of the dispenser.

It is necessary to return the dispensing member 73 into engagement with the now uppermost towel 18 of the pile 17 for a repetition of its stripping operation. To this end the solenoid 58 is de-energized as soon as the soiled towel releases itself from the tines 108 of the rock shaft 109 and permits this rock shaft to return to its normal position under the influence of its counterweight 114. This return movement of the rock shaft 109 opens both of the switches 121 and 122 thereby to de-energize the motor 126 and the solenoid 58. When the solenoid is de-energized, the return spring 70 draws the sweep arm 68 to the right as viewed in Fig. 7. However, this sweep arm is prevented from riding down the track bar 88 by the track switch 93. Instead the roller 92 which supports this sweep arm rides up on the track switch 93 and over the pivoted end thereof, falling into engagement with the depressed end of the track bar 88. In the return movement of the sweep arm 68, the dispensing member 73 is therefore caused to follow the upper curve of Fig. 10. It will be seen that in this movement the dispensing member 73 is held out of engagement with the uppermost towel 18 of the pile 17 until the very end of its return path, at which time it is dropped in a substantially vertical direction into engagement with this uppermost towel. This vertical drop of the dispensing member 73 also serves to insure interengagement of the bristles 78 of the dispensing member with the fibers of the uppermost towel so as to insure reliable stripping of this towel from the top of the pile 17 the next time a soiled towel is thrown down the tubular chute 99, 100.

An important feature of the invention resides in indexing the elevation of the stripper mechanism relative to the height of the pile 17 of towels, this being effected by the simple expedient of mounting the stripper mechanism in the casing or box 26—31 and supporting this box by the crank-shaped arm 50 and indexing roller 55 from the top of the pile of towels, such support

being assisted by the counterweight 48. As the height of the pile 17 of fresh towels lowers, the dispensing mechanism supported on this pile by the indexing roller 55, likewise lowers so that the dispensing member 73 is always held at the correct elevation to interengage and strip the uppermost towel 18 from the pile 17 of fresh towels.

From the foregoing it will be seen that the present invention provides a very simple and sturdy mechanism for rapidly and reliably delivering a fresh towel in return for a soiled towel and in particular accomplishes the specific objects set forth in a simple and effective manner.

I claim:

1. A receiver for soiled towels and the like, comprising a casing forming a compartment for soiled towels, said casing having an inlet opening in one wall thereof through which soiled towels are thrown from the exterior of said casing into said compartment, a member movably mounted in said casing in the path of the soiled towels so thrown from the exterior of said casing into said compartment and moved by each passing towel, a distributing member movably mounted in said casing in the path of the soiled towels so thrown from the exterior of said casing into said compartment and at a point to engage said soiled towels subsequent to the engagement of said soiled towels with said first movably mounted member and to fling said soiled towels around said compartment, and means arranged to actuate said distributing member in response to the movement of said first movably mounted member.

2. A receiver for articles, comprising a casing forming a compartment for said articles, said casing having an outlet opening in one wall thereof, and said casing also having an inlet opening in one wall thereof through which said articles are thrown from the exterior of said casing into said compartment, a member movably mounted in said casing in the path of the articles so thrown from the exterior of said casing into said compartment, a distributing member movably mounted in said casing in the path of the articles so thrown from the exterior of said casing into said compartment and at a point to engage said articles subsequent to the engagement of said articles with said first movably mounted member and to fling said articles around said compartment, and means arranged to actuate said distributing member in response to the movement of said first movably mounted member.

3. A receiver for soiled towels and the like, comprising a casing forming a compartment for soiled towels, said casing having an inlet opening in one wall thereof through which soiled towels are thrown from the exterior of said casing into said compartment, a member movably mounted in said casing in the path of the soiled towels so thrown from the exterior of said casing into said compartment and moved by each passing towel, a distributing impeller rotatably mounted in said casing in the path of the soiled towels so thrown from the exterior of said casing into said compartment and at a point to engage said soiled towels subsequent to the engagement of said soiled towels with said movably mounted member, an electric motor driving said impeller, and means arranged to energize momentarily said motor in response to the movement of said movably mounted member.

4. A receiver for articles, comprising a casing forming a compartment for said articles, said casing having an outlet opening in one wall

thereof and said casing also having an inlet opening in one wall thereof through which said articles are thrown from the exterior of said casing into said compartment, a member movably mounted in said casing in the path of the articles so thrown from the exterior of said casing into said compartment, a distributing impeller rotatably mounted in said casing in the path of the articles so thrown from the exterior of said casing into said compartment and at a point to engage said articles subsequent to the engagement of said articles with said movably mounted member, an electric motor driving said impeller, and means arranged to energize said electric motor momentarily in response to the movement of said movably mounted member.

5. Apparatus for dispensing individual cloth towels one at a time from a pile of clean towels, comprising a casing for said pile of towels and forming a compartment for soiled towels, said casing having an outlet opening in one wall thereof, a chute leading from an inlet opening in said casing and having an inclined bottom wall over which soiled towels thrown into said inlet opening slide from said chute into said compartment, a tine movably mounted with its pointed end arranged adjacent the lower edge of said inclined bottom wall and in the path of and opposing the soiled towel sliding therefrom whereby said tine is moved by each passing soiled towel, a dispensing mechanism arranged to dispense one towel at a time from said pile toward said outlet opening, a distributing impeller rotatably mounted in the path of the soiled towels sliding from said inclined bottom wall and engaging said soiled towels subsequent to the engagement of said soiled towels with said tine, an electric motor driving said impeller, and means arranged to actuate said dispensing mechanism and to energize momentarily said motor in response to the movement of said tine.

6. In apparatus for dispensing articles one at a time from a pile of said articles and having a casing for said pile of articles and forming a compartment for used articles, said casing having an outlet opening in one wall thereof, a dispensing mechanism arranged to dispense one article at a time from said pile toward said outlet opening, and a chute leading from an inlet opening in said casing and having an inclined bottom wall over which articles thrown into said inlet opening slide from said chute into said compartment, the combination therewith of means for actuating said dispensing mechanism, and distributing said articles uniformly in said compartment, comprising a tine movably mounted with its pointed end arranged adjacent the lower edge of said inclined bottom wall and in the path of and opposing the used article sliding therefrom whereby said tine is moved by each passing article, a distributing impeller rotatably mounted in the path of the articles sliding from said inclined bottom and engaging said used articles subsequent to the engagement of said used articles with said tine, an electric motor driving said impeller, and means arranged to actuate said dispensing mechanism and to energize momentarily said motor in response to the movement of said tine.

7. In apparatus for dispensing cloth towels, a switch mechanism actuated in response to a towel sliding down an inclined wall, comprising a tine having a sharp pointed end, means arranged to pivotally support the other end of said tine below and adjacent the lower edge of said inclined wall with its sharp pointed end extending upwardly

into the path of said towel sliding down said inclined wall whereby said pointed end impales said towel, means yieldingly holding said tine with its sharp pointed end in said position, and a pair of electrical contacts arranged to be opened and closed in response to the movement of said tine by said towel and said yielding means.

8. In apparatus for dispensing cloth towels, a switch mechanism actuated in response to a towel sliding down an inclined wall, comprising a rock shaft rotatably mounted below and adjacent to and generally parallel with the lower edge of said inclined wall, a plurality of tines each having a sharp pointed free end and having its opposite end fast to said rock shaft to project laterally therefrom with its sharp pointed end extending upwardly into the path of said towel sliding down said inclined wall whereby said pointed ends impale said towel, a stop arranged to limit the movement of said rock shaft in the direction corresponding to the movement of said pointed ends of said tines toward said positions, a counterweight for said rock shaft and arranged to hold said rock shaft in engagement with said stop, and a pair of electrical contacts arranged to be opened and closed in response to the movement of said rock shaft toward and from said stop.

9. In apparatus for dispensing cloth towels

from a pile of towels, an indexing mechanism for a vertically movable frame, comprising an L-shaped indexing arm having one end arranged in a horizontal bearing on said frame and arranged in a generally horizontal plane and having its other end arranged above said pile of towels, means arranged adjustably to secure said one end of said L-shaped arm in said bearing against rotation thereof and to vary the elevation of said other end of said L-shaped arm with reference to said frame, a roller at said opposite end of said L-shaped arm and resting on the uppermost towel of said pile, and means arranged partially to counterbalance said frame, L-shaped arm and roller.

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