Feb. 26, 1929. 1,703,265

J. DARMAN

TOWEL CABINET

Filed Dec. 6, 1926 2 Sheets-Sheet 1

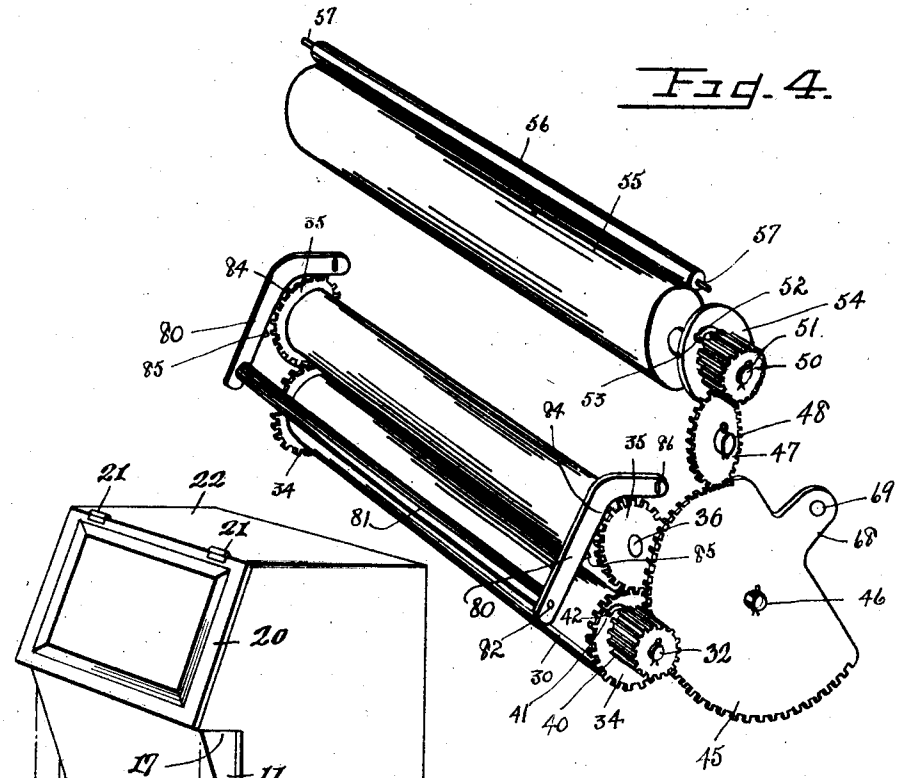


Fig. 4.

Fig. 1.

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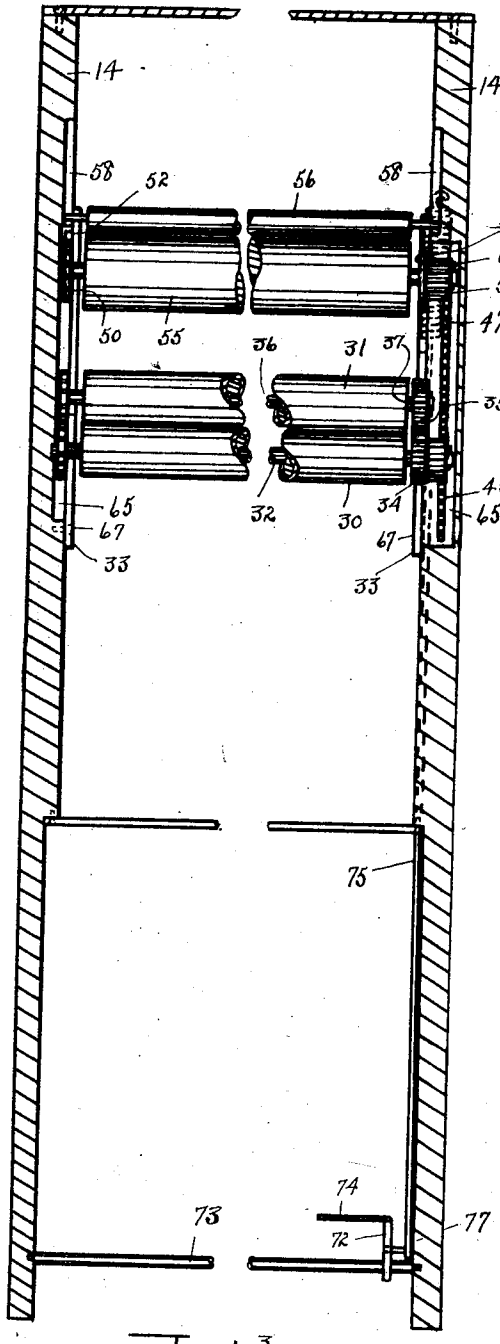


Fig 3

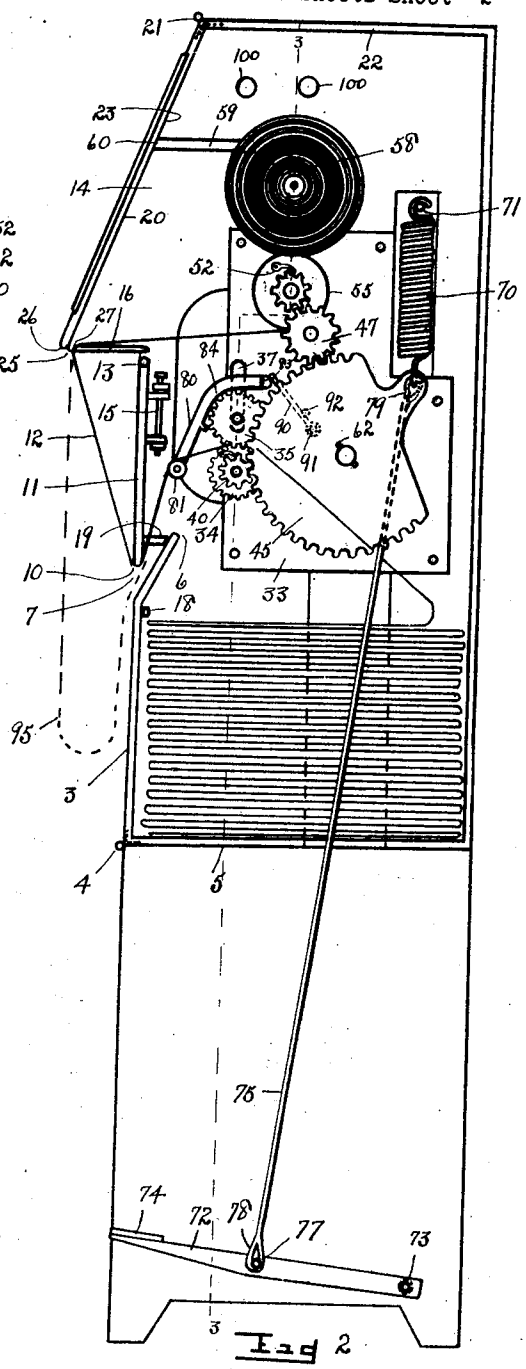


Fig 2

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Patented Feb. 26, 1929. 1,703,265

UNITED STATES PATENT OFFICE.

JOSEPH DARMAN, OF UTICA, NEW YORK, ASSIGNOR TO UTICA TOWEL CABINET CORP., OF UTICA, NEW YORK, A CORPORATION OF NEW YORK.

TOWEL CABINET.

Application filed December 6, 1926. Serial No. 152,836.

My invention relates to a towel cabinet and I declare the following to be a full, clear, concise and exact description thereof sufficient to enable anyone skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings in which like reference characters refer to like parts throughout the specifications.

The object of the invention is to provide a cabinet adapted to hold a towel for public use in hotels, clubs and like places. The towel is held in such manner that the used or soiled part will be moved within the cabinet and towards and upon an accumulating roller immediately the user has finished wiping or drying his hands thereon.

The invention will be understood by referring to the drawings in which:

Fig. 1 is a perspective view of the device.

Fig. 2 is a vertical section of the device showing the right side removed.

Fig. 3 is a sectional view of the device showing parts taken on the line 3—3 of Fig. 2, and in full.

Fig. 4 is a perspective view of the towel actuating rollers and other immediate mechanism used.

Referring more particularly to the drawings, the device embodies a cabinet 1 that is supported by standard 2, 2 disposed on opposite sides thereof. Cabinet 1 is enclosed on all sides and is equipped with a drop door 3 that is hinged as 4, 4 to the base board 5 of cabinet 1. The upper edge of door 3 is inclined inward at an angle to provide a longitudinal opening at 7 between edge 6 and the lower edge 10 of swinging cover 11 for the passage of towel 12. Cover 11 is equipped with laterally extending trunnions 13, 13 resting in sockets formed in the inner surface of sides 14, 14 of cabinet 1 and is held in place by draw bolt 15 fastened to side 14 of cabinet 1. The horizontal part 16 of the cabinet 1 is stationary and is fastened at opposite ends to sides 14, 14 which extend forward to provide an offset portion at 17. Stops 18, 18 fastened to the inner surfaces of sides 14, 14 limit the movement inward of door 3. Likewise arms 19, 19 fastened on either end of cover 11 prevent door 3 from swinging outward when cover 11 is in closed position as illustrated by Fig. 2.

A top door 20 having a mirror set in its front face therein is hinged at 21, 21 to top part 22 of the casing of cabinet 1. Door 20 is adapted to rest when closed against the edges 23, 23 of sides 14, 14 which edges 23, taper inward, whereby door 20 will be held when closed at an angle to the vertical. A longitudinal opening 25 is left between the lower edge 26 of door 20 and the adjacent edge 27 of horizontal part 15 for the passage of towel 12.

Towel 12 is placed in a folded condition in the lower part of cabinet 1. One of its ends is led upward between delivery rollers 30, 31 covered with a rubber surface. Lower roller 30 is fixed to turn with shaft 32 which has bearings in plates 33, 33 fastened to sides 14, 14 of cabinet 1. Spur gears 34, 34 are fixed on either end of shaft 32 and adapted to turn with shaft 32. Gears 34 are in mesh with spur gears 35, 35 which are fixed to turn with shaft 36. Shaft 36 turns in bearings 37 made in plates 33, 33. Bearings 37 are in each instance formed into elongated slots, whereby roller 31 mounted to turn with shaft 36 can be elevated with respect to lower roller 30 to allow for inserting the end of towel 12 therebetween. A pinion 40 which acts as a ratchet is mounted on shaft 32 and is adapted to turn independently thereof in one direction and to turn therewith in the other because of pawl 41 which is pivoted at 42 to the end surface of spur gear 34. Pawl 41 will engage the teeth of said pinion 40, whereby to cause said pinion 40 and roller 30 to turn with pinion 40 in one direction and to ride over the teeth of pinion 40 in the other, whereby to allow said pinion 40 to turn idly on shaft 32.

Pinion 40 is in mesh with sector gear 45 mounted to rotate on shaft 46 supported in bearings formed in plates 33, 33. Sector gear 45 is in mesh with spur gear 47 used to change direction of motion and mounted on shaft 48 carried in bearings in plates 33, 33. Spur gear 47 is in turn in mesh with pinion 50 which acts as a ratchet and is mounted on shaft 51 near its end. Said shaft 51 is carried in bearings formed in the plates 33, 33. Sector gear 45 is spaced from pinion 40, whereby to allow clearance for the passage of pawl 41 therebetween. To this end the teeth of the pinion 40 are sufficiently wide to span the intervening space and engage the teeth of sector gear 45 therebeyond.

A pawl 52 pivoted at 53 to the end face of disk 54 is adapted to engage the teeth of pinion 50, whereby to cause roller 55 to turn with pinion 50 in one direction and to allow

pinion 50 to turn freely on shaft 51 in the other. Disk 54 is adapted to turn with shaft 51 and is spaced from gear 47, whereby to allow for clearance of pawl 52. To this end the teeth of pinion 50 are sufficiently wide to span the intervening space and engage the teeth of gear 47 therebeyond.

Roller 55 has a sheet of carborundum attached to its outer surface or is otherwise roughened, whereby to cause towel 12 to adhere, more or less thereto and pass to reclaiming roller 56 on which the soiled part of towel 12 will be wound or accumulated. Roller 56 is mounted to turn with shaft 57 carried in bearings 58, 58 in plates 33, 33 and in opposite sides 14, 14 of cabinet 1. It is rotated by its contact with roller 54.

Bearings 58 are in each instance elongated vertical slots, whereby to allow shaft 57 to rise as towel 12 accumulates thereon. Vertical slots 58 connect with horizontal slots 59, 59 open at ends 60, 60 whereby to allow for the removal of roller 56 carrying the soiled towel 12 thereon.

Cotter pins 62 are used to hold gears 40, 45, 47 and 50 on their respective shafts. The sides 14, 14 of cabinet 1 are recessed at 65, 65 to house the gears aforementioned. Said recesses are partially covered by said metal plates 33, 33 fastened to sides 14, 14 by screws or nails 67.

Sector gear 45 is equipped with an arm 68 having an aperture at 69 through which projects one end of coiled spring 70. The opposite end of coiled spring 70 is fastened to a pin 71 mounted to the inside surface of side 14, whereby to hold sector gear 45 normally in full line position shown in Fig. 2.

Sector gear 45 can be rotated on shaft 46 to dotted line position shown in Fig. 2 by pressing on pedal 72 that is pivoted on rod 73 carried in bearings in standard 2, 2. Pedal 72 has a foot piece 74 and is connected to arm 68 of sector gear 45 by means of rod 75. Headed pin 77 extending laterally from pedal 71 engages an eye 78 formed in the lower end of rod 75. The lower end of coiled spring 70 extends through eye 79 formed on the upper end of rod 75 as well as through aperture 69 of sector gear 45 to fasten the upper end of said rod to said sector gear 45.

In order to limit the amount of towel 12 that is drawn from the lower part of cabinet 1 through longitudinal opening 7 there is provided rock arms 80, 80 adapted to carry one end, in each instance, of the rotatable roller 81 over which towel 12 passes before it reaches opening 7. Roller 81 has trunnions 82, 82 adapted to fit loosely in apertures formed in the ends of arms 80, 80 whereby said roller 81 will be permitted to rotate. Arms 80, 80 are pivoted upon studs 83, 83 fastened to the inner surface of plates 33, 33 and rest along portions 84, 84 upon gears 34, 34. A tooth 85 is formed integral with the inner side of each of said arms 80 and is adapted to engage the teeth of gears 34, 34 when said arms are actuated upon their fulcrums 83, 83 which will happen when towel 12 is drawn downward against roller 81. In order to provide for the movement of arms 80, 80, a vertical elongated recess 86 is made in each instance in arms 81, 81 through which said studs 83 upon which they are pivoted project. However, teeth 85 are held normally away from engagement with the teeth gears 34, 34 respectively, by straight or flat springs 90, 90 fastened securely at one end in each instance, by a nail or pin 91 engaging plate 33. Another pin 92 is in each instance secured to plate 33 and adjacent the edge of spring 90 to resist any pressure against spring 90. The upper ends of each of springs 90 rest loosely against the inner ends of arms 80, 80.

The operation of the device is effected by placing a towel 12 in folded condition in the lower part of cabinet 1. This can be done conveniently by lowering drop door 3. Cover 11 will swing outwardly upon elevating bolt 15 for the purpose. The end of towel 12 is led upward between rollers 30 and 31 over roller 81 through opening 7, upward and through opening 25, back and over roller 55 and under roller 56. The end of towel 12 is looped, through which loop roller 56 will be projected, it having been removed for the purpose. One or two turns of roller 56 will thereupon cause said towel 12 to roll thereon when said roller 56 is turned intermittingly by its contact with roller 55. Roller 55 will be turned by the user placing his foot on piece 74 of pedal 72 and thereby rocking said pedal 72 to draw rod 75 downward to turn sector gear 45. As sector gear 45 turns on its pivot 46 it will revolve pinion 40 and gear 47 and pinion 50 in mesh therewith. However, under these conditions lower pinion 40 will turn with roller 30, whereas gear 47 and pinion 50 will turn idly and rollers 55 and 56 remain stationary. Pawl 52 slips over the teeth of pinion 50 in this instance.

As roller 30 turns it will draw upward and over its surface and under roller 31 a new or clean portion of towel 12. This clean portion 95 will drop in a loop for the convenience of the user as shown in dotted lines in Fig. 2. Immediately thereafter the user releases pedal 70, sector gear 45 will revolve in the opposite direction under influence of coiled spring 70. During this latter movement of sector gear 45 gear 47 will rotate pinion 50 and pinion 50 will rotate roller 55 because of the engagement of the end of pawl 52 with the teeth of pinion 50. Roller 55 will in turn rotate roller 56 to wind towel 12 thereon, whereas in this instance pinion 40 will turn idly upon shaft 32.

Should the user exert a pull on towel 12 after pushing down on pedal 71, towel 12 will move roller 81 to dotted line position

shown in Fig. 2 to cause teeth 85, 85 on arms 80, 80 to engage the teeth of gears 34, 34 and, thereby, prevent the rotation of rollers 30 and 31. Arms 80, 80 will bear also against the upper surfaces of the teeth of gears 34, 34 and, thereby, tend through said gears 34, 34 to force roller 31 in close contact with roller 30, whereby to push towel 12 therebetween and hold it from further movement. This in turn will cause towel 12 to resist any tendency to pull it from the lower part of the cabinet.

There are ventilating holes 100 in the top of cabinet 1.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is as follows:

1. In a towel cabinet, a set of rollers adapted to expose a portion of a towel for use, a roller for accumulating the used part of the towel thereon, another roller in contact with said accumulating rollers, a pinion operatively connected with said last named roller, a gear in mesh with said pinion, gears connected to turn with said first named rollers, a pinion adjacent one of said gears, a sector gear in mesh with said last named pinion and in mesh with said first named gear and means for actuating said sector gear, whereby to turn said rollers to expose a portion of the towel and spring means for reversing the rotation of said sector gear, whereby to reclaim the used portion of said towel.

2. In a towel cabinet, a set of rollers adapted to expose a portion of a towel for use, gears connected with said rollers, a pinion mounted adjacent one of said gears, a roller for accumulating the used portion of said towel, another roller in contact with said accumulating roller, a pinion mounted adjacent said roller, a gear in mesh with said last named pinion, a sector gear in mesh with said gear and the first named pinion, means for actuating said sector gear in one direction, whereby to turn said rollers to expose a portion of said towel and spring means for actuating said sector gear in the reverse direction, whereby to reclaim the used portion of said towel.

3. In a towel cabinet, a set of rollers adapted to expose a portion of a towel for use, gears mounted to turn with said rollers, a pinion connected with one of said gears, a sector gear in mesh with said pinion, a roller for accumulating the used portion of said towel, another roller in contact with said accumulating roller, a pinion mounted adjacent the roller in contact with the accumulating roller, a gear in mesh with said pinion, said last named gear in mesh with said sector gear, means for actuating said sector gear in one direction, whereby to expose a portion of the towel for use and automatic means for actuating said sector gear in the reverse direction, whereby to reclaim the used portion of said towel.

4. In a towel cabinet, a set of rollers adapted to expose a portion of a towel for use, gears mounted to turn with said rollers, a pinion connected with one of said gears, a sector gear in mesh with said pinion, a roller cooperating with said delivery rollers for accumulating the used portion of said towel thereon, another roller in contact with said accumulating roller, a pinion mounted adjacent the roller in contact with the accumulating roller, a gear in mesh with said last named pinion and with said sector gear, means for actuating said sector gear, whereby to rotate said set of first named rollers for exposing the portion of the towel for use, automatic means for reversing the rotation of said sector gear, whereby to turn the accumulating roller to wind the used portion of the towel thereon, and means to limit the amount of towel for use.

In testimony whereof I have affixed my signature.

JOSEPH DARMAN.