

Nov. 29, 1966

W. J. CRAVEN, JR
PAPER TOWEL DISPENSER

3,288,387

Filed Dec. 8, 1964

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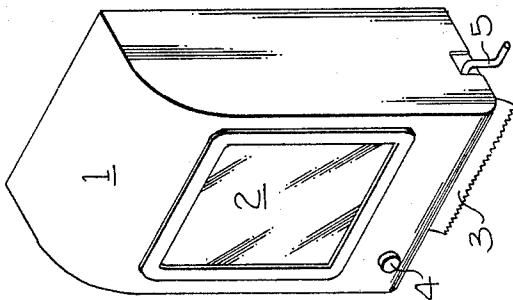
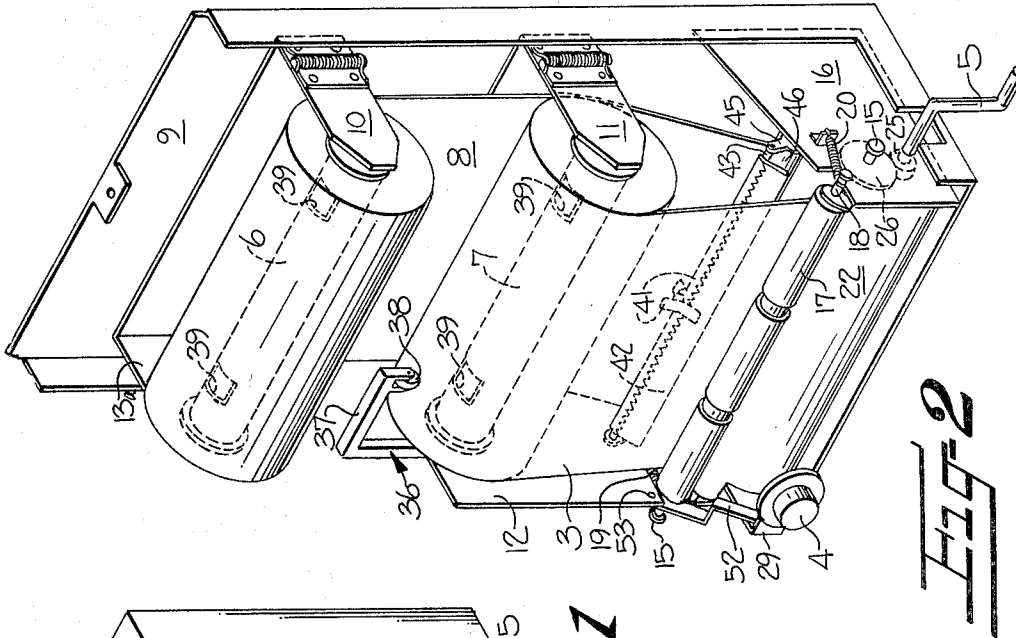
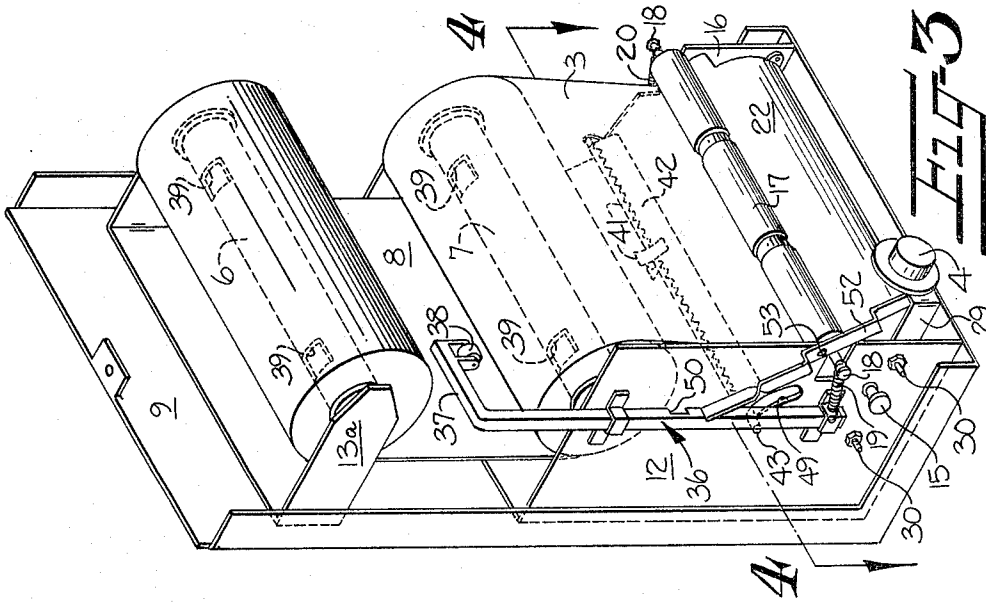


Fig. 1

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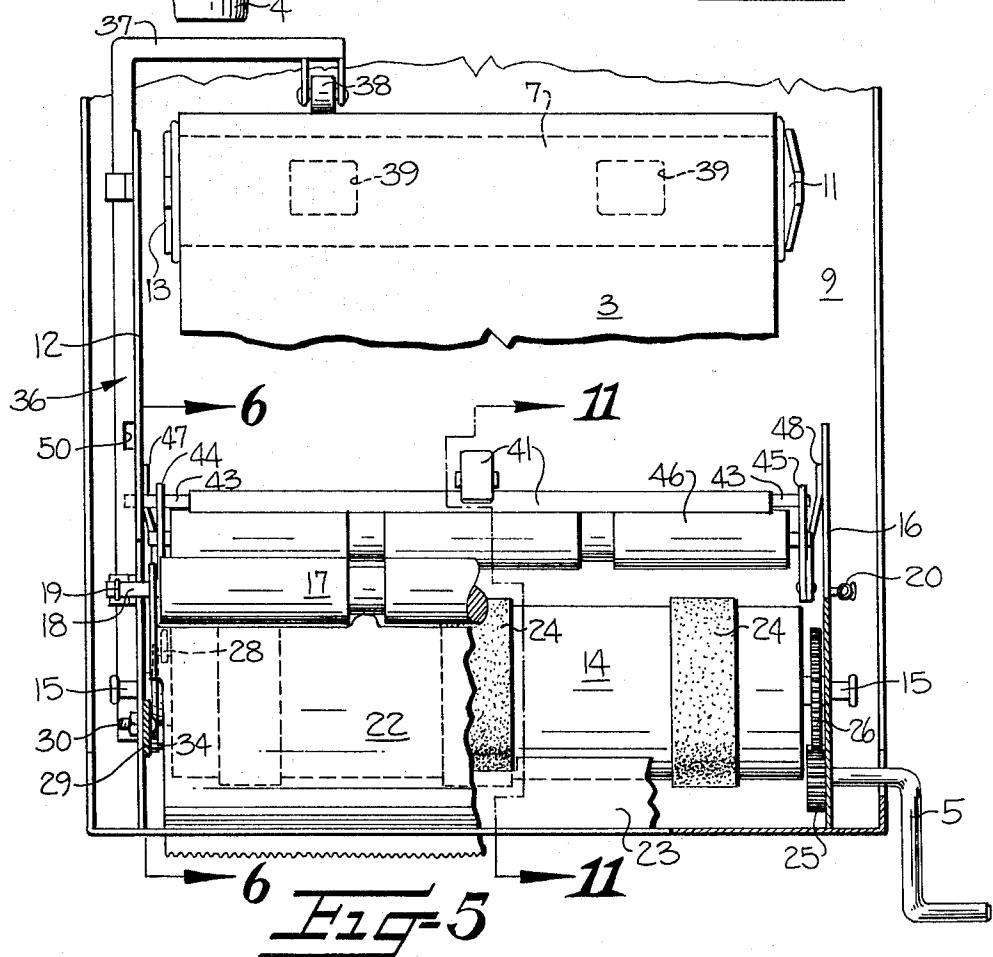
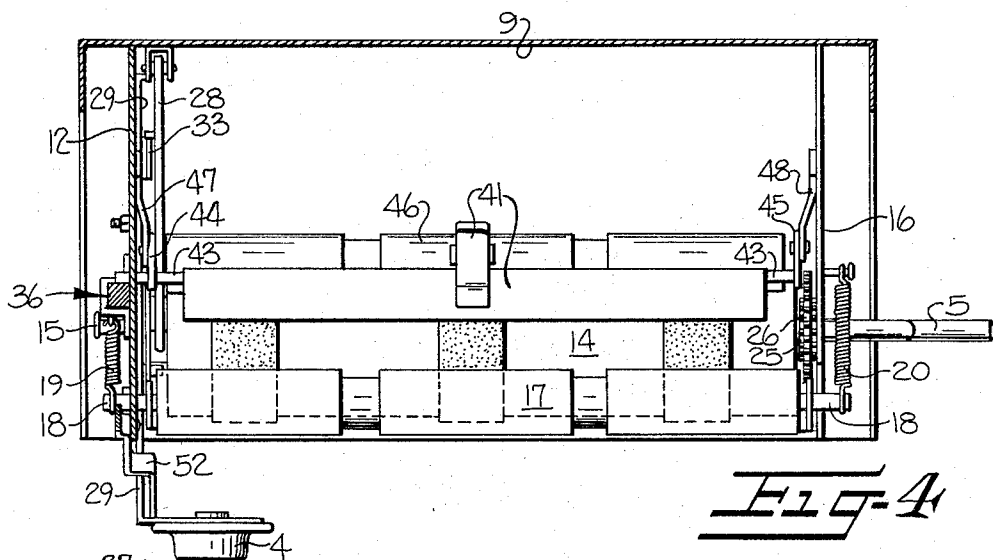
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4 Sheets-Sheet 2



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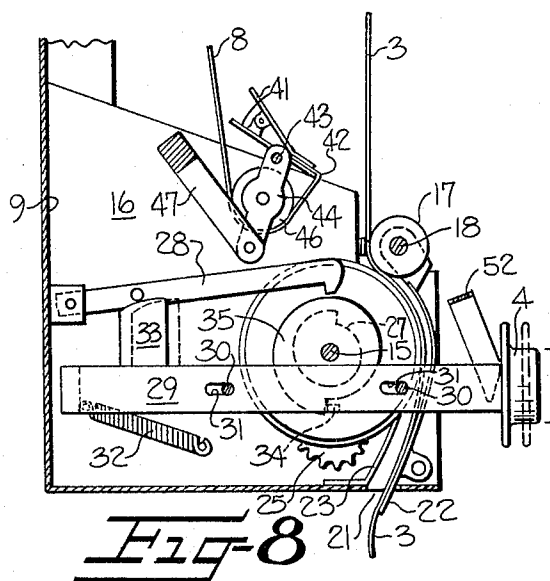
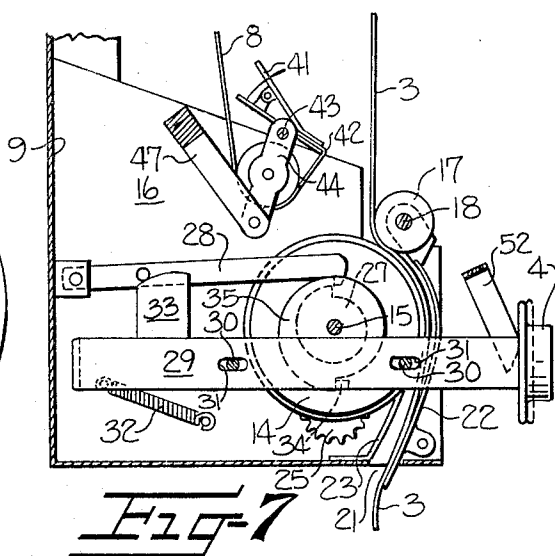
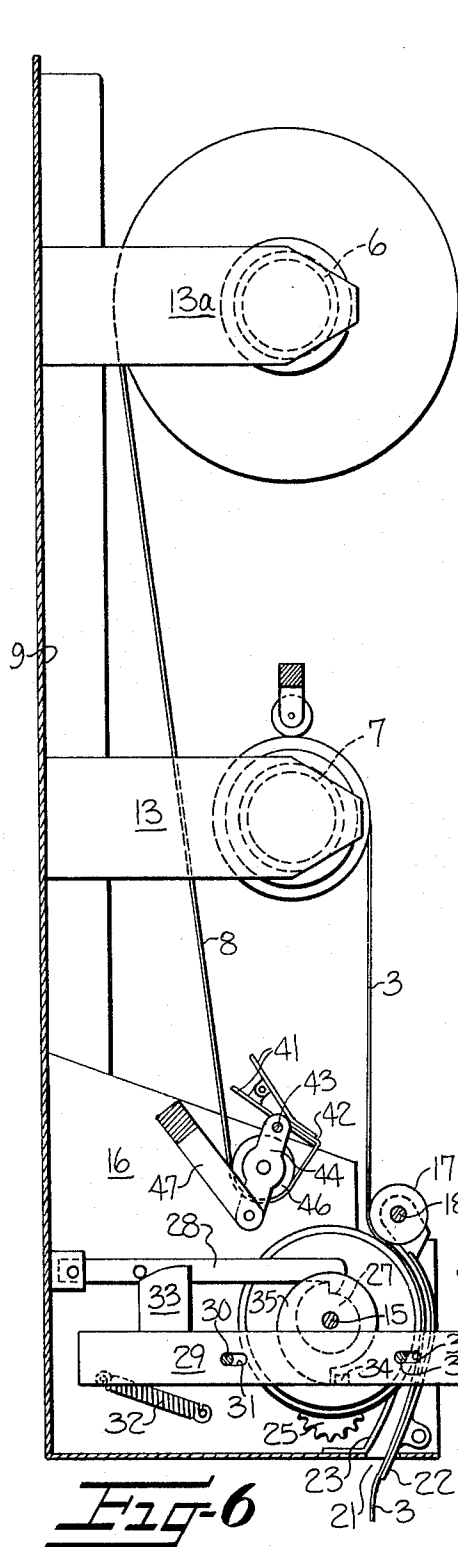
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PAPER TOWEL DISPENSER

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4 Sheets-Sheet 3



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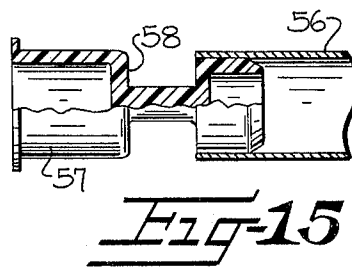
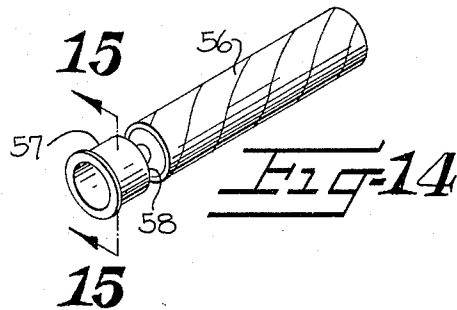
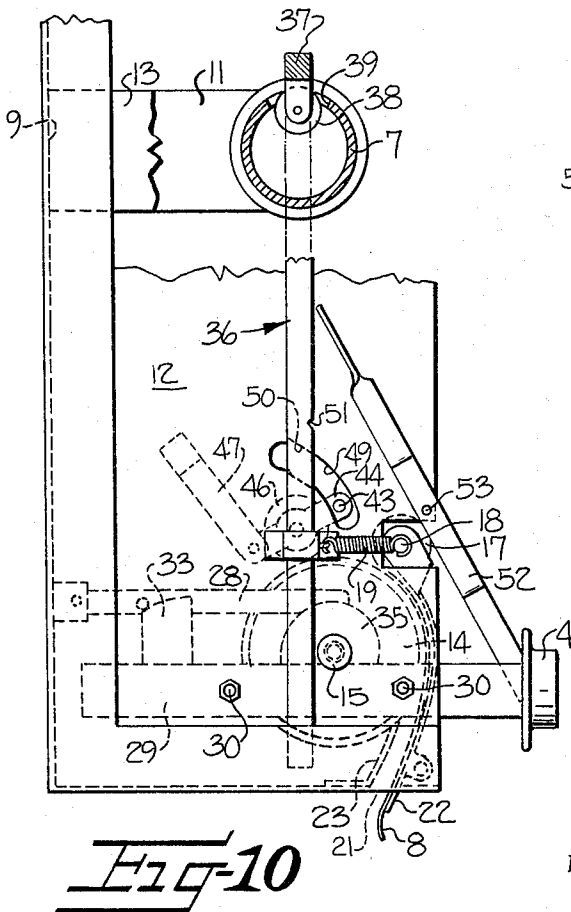
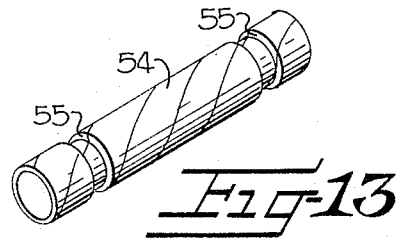
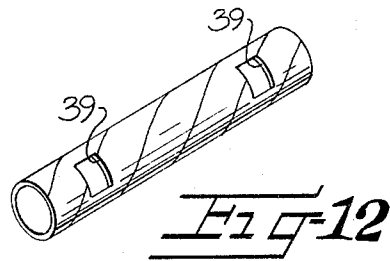
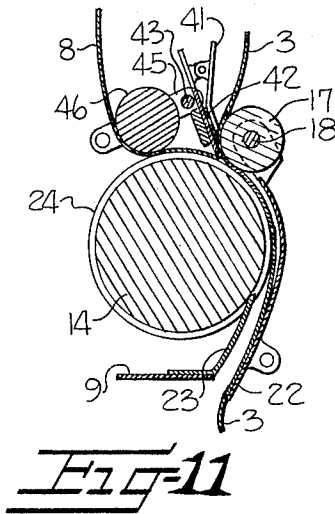
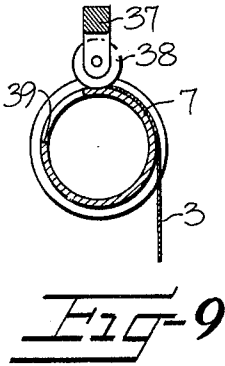
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4 Sheets-Sheet 4



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1

3,288,387

PAPER TOWEL DISPENSER

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9 Claims. (Cl. 242—55.53)

My invention pertains to a paper towel dispenser, and more particularly, to a two roll paper towel dispenser which begins feeding from a reserve roll in response to depletion of the primary supply roll.

The paper towel dispensers which are now in widest use employ only a single roll of toweling. When the supply roll is depleted, an attendant must service the dispenser by replacing the depleted roll before toweling may again be dispensed. The frequent servicing required by such single roll dispensers has become an economically limiting factor in the attraction of using paper towels, due to the time required for frequent servicing of the dispensers.

In an attempt to avoid this economically limiting factor, it has previously been proposed to use two roll towel dispensers and provide some means for selectively dispensing towels first from a primary supply roll and, on the depletion of the primary supply roll, from a reserve supply roll. The dispensers of this type known in the prior art have both economic and mechanical deficiencies. Some provide two entirely separate dispensing systems, and select between which of the two dispensing systems is to be used on the basis of the presence or absence of a web of paper toweling in the primary dispensing system. This type of dispenser suffers an economic deficiency in that the relatively expensive dispensing system is duplicated. Other types known in the prior art employ a common dispensing system, but determine the roll from which feeding is to occur by sensing the absence or presence of a web of toweling in the primary supply path and introduce a supply from the reserve supply roll into the dispensing system. These dispensers suffer from mechanical deficiencies, in that the apparatus for sensing the absence or presence of a web of toweling in the primary supply path exerts an excessive frictional drag on the web, making the dispensing of toweling from the primary supply roll more difficult and occasionally leading to malfunctions by tearing the web. Further, the absence of a positive introduction mechanism for the web of toweling from the reserve supply roll will result in toweling failing to feed from the reserve supply roll through the dispensing system.

The two roll paper towel dispenser of my invention corrects the deficiencies of those known in the prior art by providing a sensing means for the paper toweling in the primary supply system which does not exert excessive friction on the dispensing system and by providing positive introduction for the paper toweling from the reserve supply system.

It is an object of this invention to provide an improved two roll paper towel dispenser which will initiate supply of toweling from a reserve supply roll in response to depletion of the primary supply roll.

A further object of this invention is to provide an improved two roll paper towel dispenser in which the sensing means for determining the depletion of the primary supply roll does not exert excessive friction on the web of toweling.

A further object of this invention is to provide an improved two roll paper towel dispenser in which toweling from the reserve supply roll is positively introduced into the dispensing system.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which:

2

FIGURE 1 is a perspective view of the towel dispenser and cover as mounted for use;

FIGURE 2 is a perspective view similar to FIGURE 1, with the cover removed;

FIGURE 3 is a perspective view similar to FIGURE 2, from the left side;

FIGURE 4 is a sectional view from above, taken on the line 4—4 in FIGURE 3;

FIGURE 5 is a front view, in partial section;

FIGURE 6 is a side sectional view taken along the line 6—6 in FIGURE 5;

FIGURE 7 is similar to FIGURE 6, showing the beginning of a dispensing cycle;

FIGURE 8 is similar to FIGURE 7, further showing the beginning of a dispensing cycle;

FIGURE 9 is a detail of the sensing means responsive to depletion of the primary supply roll;

FIGURE 10 is an end view from the left showing the operation of the sensing means on depletion of the primary supply roll;

FIGURE 11 is a detail view of the mechanism for positively feeding toweling from the reserve supply roll taken along the line 11—11 in FIGURE 5;

FIGURE 12 is a perspective view of a core to be used for the paper toweling supply rolls;

FIGURE 13 is a perspective view of a first modification of the core to be used for the paper toweling rolls;

FIGURE 14 is a perspective view of a second modification of the core to be used for the paper toweling rolls; and

FIGURE 15 is a part sectional view of the modified roll of FIGURE 14, taken along the line 15—15 in FIGURE 14.

Briefly, the two roll towel dispenser of my invention is designed for use with towel rolls of the type formed by winding a web of toweling about a core. Two such cores are mounted on vertically spaced horizontal axes, one core and web serving as a primary supply roll and the other serving as a reserve supply roll. The primary supply roll is engaged by a sensing member which moves with variation in roll diameter and has a roller member for low friction engagement with the supply roll. The core for the supply roll has a cavity and, on depletion of the roll, the roller member of the sensing member enters the cavity in the roll core. A gripping member engages the leading edge of the web of toweling carried on the reserve roll, and is controlled by the position of the sensing member. When the sensing member is engaging a primary supply roll which is not depleted, the gripping member is held in a position withdrawn from the feeding mechanism. As the roller member enters the cavity of the primary supply roll, on depletion of that roll, the gripping member is permitted to move to a second position adjacent the feeding mechanism at which the leading edge of the web from the reserve roll is positively introduced into the feeding mechanism. Several types of cores may be provided, with variations in the cavities which serve to initiate introduction of the web from the reserve supply roll into the feeding mechanism. The feeding mechanism uses a feed roller and a backing roller to form a nip, through which the web of toweling to be dispensed passes. The rotation of the feeding roller, and thus the length of web dispensed, is controlled by a ratchet and pawl mechanism.

FIGURE 1 of the accompanying drawings is a perspective view of the two roll towel dispenser of my invention as it appears in use, when mounted on a wall at any desired use location. The towel dispenser has a protective cover 1 in order to provide a pleasing appearance and protect the mechanical elements of the apparatus. The cover 1 carries a mirror 2, if desired. A web of towel-

3

ing 3 may be projected from the lower surface of the dispenser by depressing a release button 4 and turning a crank 5. As will be more fully described subsequently, a controlled length of the web 3 is dispensed on each operation of the release button 4 and crank 5.

The mechanism of my towel dispenser is made clear by the views in which the cover 1 is removed. With the cover removed, as in FIGURES 2 and 3, it is seen that my dispenser provides means for supporting two rolls of toweling. Each roll is formed with a core 6, 7 and a web 3, 8 of paper toweling material wound on the core. The cores and webs together form supply rolls, and these supply rolls are supported within the towel dispenser cabinet for rotation about vertically spaced horizontal axes. The supporting means for the supply rolls may be any suitable conventional assembly, but for purposes of convenience I provide roll supports which make replacement of the rolls as they are exhausted more easy. The towel dispenser has a main body member or frame 9 which serves to support the various mechanisms of the dispenser and generally provide a base which may be attached to the wall in mounting the dispenser. On the frame 9 are two spring loaded arms 10, 11, visible in FIGURE 2. These arms are resiliently urged into engagement with the ends of the cores 6, 7 and press the cores into engagement with support structures for the opposite end of the rolls. The support structure for the primary supply roll, which is the lower of the two rolls, is a fixed arm 13 adjacent the first side plate member 12, which member also serves to support other elements of the dispenser mechanism. The reserve supply roll, or uppermost of the two rolls of toweling, is supported by a fixed arm 13a. As shown by FIGURES 2 and 3, the spring loaded arm 10 and the fixed arm 13a and the spring loaded arm 11 and the fixed arm 13 define two horizontal axes, spaced vertically in the dispenser, for supporting the reserve and primary supply rolls respectively.

The mechanical feeding means which governs the dispensing of the web toweling from the dispenser is shown in FIGURES 4-8, 10 and 11. A feed roller 14 is supported for rotation on a shaft 15 which projects axially from the opposite ends of the feed roller. The shaft 15 is journaled in the side plate 12 and a second side plate 16, on the opposite side of the main body 9 from the side plate 12. The axis about which the feed roller 14 rotates, as defined by the shaft 15, is displaced from the axes of rotation of the cores 6, 7. A backing roller 17 is positioned adjacent the feed roller 14, and is rotatable about an axis defined by a shaft 18 projecting axially from the ends of the backing roller 17. The shaft 18 is not journaled in the side plates 12, 16, but is engaged by two springs 19, 20 which resiliently urge the backing roller 17 into engagement with the feed roller 14 to form a nip. As made clear by FIGURES 6-8, it is through this nip between the feed roller 14 and backing roller 17 that the web 3 of toweling passes to be dispensed. As the web 3 passes through the nip, it is guided to a dispensing outlet 21 by two curved members 22, 23 which together define a dispensing channel leading from the nip of the feed roller 14 and backing roller 17 to the dispensing outlet 21. Inasmuch as it is the frictional engagement between the feed roller 14, backing roller 17, and the web 3 of paper toweling which permits drawing the toweling from the supply roll and passing it through the nip to the dispensing outlet, the rollers are preferably provided with frictional surfaces. The frictional surfaces may be in the form of annular bands or ridges 24 of some relatively high friction surface material, such as a rubber facing.

In order to provide a control over the length of the web 3 of paper toweling advanced for use with each operation of my towel dispenser, I provide a timing mechanism to govern the rotation of the feed roller 14. The feed roller 14 may be driven, to dispense the web 3 of toweling, by the crank 5 through a gear train. The crank 5 is journaled for rotation in the second side plate

4

16, and carries a drive gear 25 positioned inwardly of the side plate. The drive gear 25 engages a driven gear 26 which is fixed to the shaft 15 of the feed roller 14. Thus, when the feed roller 14 is free to rotate, it may be driven by turning the crank 5 until it is stopped by the timing mechanism. The timing mechanism is shown in FIGURES 6-8. As may be seen there, the shaft 15 of the feed roller 14 carries two single step ratchets positioned between the feed roller 14 and the first side plate 12. A first ratchet 27 is engaged by a pawl 28 to stop the rotation of the feed roller 14 after it has turned one revolution, and dispensed the desired length of the web 3 of paper toweling. To release the first ratchet 27 and permit dispensing of the next subsequent length of the web 3, release button 4 must be depressed. The release button 4 is carried by an operating member 29, which is supported for reciprocatory movement by two bolts 30 extending through the first side plate 12 and through two slots 31 in the operating member. The operating member is normally resiliently urged toward the front of the dispenser by a spring 32. The operating member 29 carries a cam 33 and a lateral projection 34. On reciprocation of the operating member 29, the cam 33 engages the pawl 28, to lift it out of engagement with the first ratchet 27. The projection 34 then engages the second ratchet 35, carried by the shaft 15 of the feed roller 14. These two engagements are progressive; that is, the cam 33 first engages the pawl 28 to raise it out of engagement with the first ratchet 27, and then the projection 34 engages the second ratchet 35 to cause a slight rotation of the feed roller 14. This slight rotation of the feed roller 14 is necessary in order to prevent immediate re-engagement of the pawl 28 and first ratchet 27, when the operating member 29 is returned to its normal position by the action of the spring 32. Once the feed roller 14 has been released for rotary motion by the disengagement of the pawl 28 and first ratchet 27, it may be rotated by means of the crank 5, drive gear 25 and driven gear 26 to dispense the desired length of the web 3 of toweling.

In order to provide for a continuous dispensing of paper toweling, and to significantly reduce the frequency of servicing, the towel dispenser of this invention provides means for sensing depletion of the primary supply roll of paper toweling and automatically initiating feeding of paper toweling from a reserve supply roll. As discussed above, the dispenser provides two supply rolls of toweling. A primary supply roll is formed by the web 3 wound on the core 7, while a reserve supply roll is formed by the web 8 wound on the core 6. While the web 3 from the primary supply roll is normally dispensed through the feed roller 14 and backing roller 17, as detailed above, on depletion of the primary supply roll the web 8 from the reserve supply roll is positively introduced into the nip between the feed roller 14 and backing roller 17 for feeding to the dispensing outlet 21. The introduction of the reserve supply roll web 8 into the dispensing mechanism is affected by a retaining means, operating under the control of a sensing means which is responsive to depletion of the primary supply roll.

The sensing means is shown most clearly in FIGURES 3, 5, 9 and 10. As shown in those drawings, each of the cores 6, 7 has cavities spaced from the ends of the cores. These cavities may be in the form of any of several modifications, as shown in FIGURES 12-15 and to be discussed subsequently. A sensing member 36 is supported by the first side plate 12 for movement along a vertical line. The sensing member 36 has, at its upper extremity, a horizontal arm 37, which extends inwardly over the primary supply roll, between the primary supply roll and the reserve supply roll. The end of the horizontal arm 37 carries a roller member 38, which is spaced inwardly from the end of the primary supply roll a distance equal to the spacing of the cavity. When free to move vertically under the influence of gravity and its own weight, the sensing member 36 is supported by the engagement of

5

the roller member 38 with the surface of web 3 on the primary supply roll, and moves vertically with variations in primary supply roll diameter.

FIGURES 9 and 10 make clear the operation of the sensing member 36 on depletion of the web 3 from the primary supply roll. So long as a portion of the web 3 overlying the cavity is wound around the core 7, the roller member 38 of the sensing member 36 will engage the web surface. However, when the last turn of the web 3 is removed from the core 7, the cavities 39 formed in the core 7 become open. Then, as the cavity 39 is brought upward by the removal of the end of the web 3 from the core 7, the roller member 38 will drop into the cavity. FIGURE 9 shows the core 7 as the web 3 overlying the cavity is being removed, with the roller member 38 just about to enter cavity 39. In FIGURE 10, the last portion of the web 3 has been removed from the core 6, and the roller member 38 has entered the cavity 39, permitting the sensing member 36 to drop to the lower extremity of its range of movement. During the time that the web 3 is being removed from the core 6, the relatively low frictional engagement of the roller member 38 with the primary supply roll does not impede the removal of the web 3 from the core by the dispensing mechanism. Further, the marked absence of friction on the web 3 avoids placing the web under tension which would lead to tearing of the web by rapid operation of the feed roller 14 and backing roller 17, as may occur in the dispensers of the prior art.

In order to positively initiate feeding of the web 8 from the reserve supply roll, the towel dispenser of this invention provides a retaining means to introduce the leading edge of the web 8 into the nip of the dispensing mechanism formed between the feed roller 14 and the backing roller 17. This retaining means and the positive introduction of the web 8 into the dispensing mechanism are shown in FIGURES 6-11. As shown in those figures, the retaining means includes a gripping member or clip 41 by which the leading edge 42 of the web 8 is releasably secured. The elongated lower jaw of clip 41 is supported by a horizontally extending bar 43 which engages at its outer end two links 44, 45. The links also carry between them an auxiliary roller 46, around which the web 8 from the reserve supply roll is threaded to be engaged by the clip 41. The links 44, 45 are supported for pivotal movement by pivot points from two blade members 47, 48 which are fixed to the first and second side plates 12, 16. An arcuate slot 49 is cut in the first side plate 12, and the end of the bar 43 adjacent the plate projects through the slot 49. By the pivotal attachment of the links 44, 45, the links, auxiliary roller, and gripping member are permitted to move between two positions along an arcuate path. The first position places the clip 41 at a point removed from the nip of the feed roller 14 and the backing roller 17, as shown in FIGURES 6-8. The second position places the clip 41 adjacent the nip of the rollers, as shown in FIGURES 10 and 11. As shown in those figures, the clip when in the first position holds the leading edge 42 of the web 8 away from the nip of the rollers and, in the second position, introduces the leading edge 42 into the nip between the feed roller 14 and the web 3 from the primary supply roll. When the leading edge 42 is introduced into the nip in this fashion, it is engaged by the feed roller 14 and the remaining end of the web 3 and carried into the nip to automatically initiate feeding from the reserve supply roll.

The movement of the retaining means is controlled by the sensing member 36, in response to the depletion of the primary supply roll. This is shown in FIGURES 5 and 10, where a notch 50 in the vertically extending portion of the sensing member 36 is shown. The notch 50 is so positioned along the vertical length of the sensing member 36 that, when the sensing member 36 is at the lower extremity of its range of vertical movement due to the entrance of the roller member 38 into the cavity 39, the notch 50 is alined with the arcuate slot 49. At any other

6

position of the sensing member 36, the retaining means will be restrained in its first position by the engagement of the protruding end of the bar 43 with the vertical portion of sensing member 36. Then, as the roller member 38 enters a cavity 39 on depletion of the primary supply roll, the gripping member 40 will fall forward along an arcuate path through the notch 50 to its second extreme position, at which the clip 41 introduces the leading edge 42 of the web 8 of the reserve supply roll into the nip of the dispensing mechanism rollers.

In order to facilitate loading the two roll dispenser of this invention, an interlock is provided for the sensing member 36 and the operating member 29. This interlock takes the form of a groove 51 in the forward surface of the vertical portion of the sensing member 36 and a lever 52 supported for pivotal movement about a bolt 53 through the plate 12. One end of the lever 52 extends forward of the plate 12 to engage the operating member 29 adjacent the release button 4, while the opposite end of the lever normally rests on the forward facing surface of the sensing member 36. When the dispenser is visited by an attendant and found to be dispensing from the reserve supply roll, the gripping member is withdrawn from its second extreme position to the first extreme position, with the protruding end of the bar 43 passing through the notch 50 in the sensing member 36. Then, the sensing member 36 is moved upwardly to withdraw the roller member 38 from the cavity 39. With the sensing member 36 in an upward position, the lever 52 is engaged in the groove 51, to hold the sensing member in its upward position and permit the attendant to use both hands in proceeding to change the supply rolls in the dispenser. Subsequently, on the first use of the dispensing mechanism, the depression of the operating member 29 to release the feed roller 14 for rotation simultaneously releases the lever 52 from the groove 51 and permits the sensing member 36 to drop downwardly and engage the roller member 38 with the web 8 on the primary supply roll.

In order to permit the sensing means and retaining means to function properly, this invention provides cores, on which webs of paper toweling may be wound, which have cavities spaced from the ends of the cores. The simplest form contemplated for use with this invention, as shown in FIGURES 2-10, is shown in a perspective view in FIGURE 12. This core 6 may be of the spiral wound paper tube type which is commonly used as a core for paper towel rolls. Cavities 39 are provided by slotting the tube at points spaced from the ends of the core, providing in effect square openings or windows. This type of core is illustrated in FIGURE 10, where it may be seen that the roller member 38 enters the cavity by dropping through the opening or window in the core. While this type of core is the most simple adequate embodiment, and thus may be preferred, use of such a core does present one minor drawback. As illustrated in FIGURE 9, the trailing edge of the web 3 wound onto the core to form a supply roll must be located adjacent the cavities, in order to assure positive actuation of the sensing member accurately at the trailing edge of the web. Inasmuch as the care required to assure accurate placement of the trailing edge adjacent the cavities may have the effect of increasing the cost of manufacturing the supply rolls, modifications have been proposed to avoid the necessity of accurately placing the trailing edge of the web on the core.

One such modification is shown in FIGURE 13, where a somewhat conventional spirally wound tube 54 is provided with cavities in the form of portions 55 of reduced diameter, spaced from the ends of the core. With this modification, the sensing member 36 must move to the position to release the gripping member for movement from its first extreme position to its second extreme position when the roller member 38 enters the reduced diameter portion 55 on removal of the web overlying that portion.

As the accuracy of the timing of the engagement of the web 8 the reserve supply roll with the dispensing mechanism depends at least in part on the accuracy of positioning of the sensing member 36, misfeeding of the web from the reserve supply roll is more easily avoided if the sensing member 36 must move over a larger distance before releasing the retaining means to move to the second position. This desirable action is obtained by the modified core shown in FIGURES 14 and 15. There, a tube 56 is provided which is of shorter axial length than the width of the web to be wound on the core to form a supply roll. A reduced diameter portion of significantly smaller diameter is provided by an insert 57, which may be of any suitable material such as molded plastic. The insert 57 is of sufficient axial length to provide, when assembled with the tube 56, a core having an axial length equal to the width of the web to be wound onto the core to form the supply roll. The cavity provided by the reduced diameter portion 58 has sufficient depth, relative to the diameter of the core 56, to provide ease in actuation of the sensing member 36 on removal of the web overlying the cavity. Further, the circumferential extent of the cavity is such as to permit actuation of the sensing member 36 as the trailing edge of the web passes the roller member 38 regardless of the placement of that trailing edge around the circumference of the core 56.

In operation, paper toweling is dispensed from the primary supply roll until such time as that roll is depleted and the roller member 38 of the sensing member 36 enters into the cavity 39 in the core 6. The entrance of the roller member 38 into the cavity permits the sensing member 36 to drop to the bottom of its range of vertical movement, and aligns the notch 50 with the arcuate slot 49. This alinement permits the protruding end of the bar 43 to pass through the notch 50, and permits the retaining means to move from its first position in which the clip 41 is withdrawn from the nip of the feed roller 14 and backing roller 17 to its second position in which the clip 41 is adjacent the nip. As the clip 41 moves adjacent the nip, the leading edge 42 of the web 8 from the reserve supply roll is introduced into the nip between the feeding roller 14 and the web 3 from the primary supply roll. The web 8 from the reserve supply roll is thus positively introduced into the dispensing mechanism and toweling is dispensed from that roll until the attendant for the dispenser services the dispenser.

To service the dispenser, an attendant removes the cover, moves the retaining means from its second extreme position adjacent the nip to its first extreme position withdrawn from the nip, and raises the sensing member 36. The operation must be undertaken in this order in order to permit the protruding end of the bar 43 to pass through the notch 50 in the vertical portion of the sensing member 36. The sensing member 36 is then latched in its raised position by engaging the lever 52 with the groove 51. The attendant then has both hands free to remove the now empty core from the primary supply roll position by swinging supporting arm 10 outwardly. The reserve supply roll is then removed by swinging the supporting arm 11 outwardly, and replaced as the primary supply roll. A new reserve supply roll is positioned between the arm 11 and the fixed arm 13, and the leading edge of the web 8 of the new reserve supply roll is threaded around the auxiliary roller 46 and engaged with the clip 41. The cover may then be replaced, and the dispenser is prepared for further use. On the first dispensing cycle, actuation of the operating member 29 rotates the lever 52 out to the groove 51, releasing the sensing member 36 for downward movement to cause the roller member 38 to engage the primary supply roll.

In the drawings and specification there has been set forth a preferred embodiment of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes

of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a paper towel dispenser having a frame with a dispensing opening through which toweling web is dispensed, means on the frame for supporting first and second rolls of toweling for rotation about spaced apart axes and feed means supported by the frame and positioned between the axes and opening for controlling dispensing of toweling web from one roll through the opening, the improvement comprising:

each roll having a core with a peripheral cavity and a web wound on the core to overlie the cavity, and means supported by the frame and being responsive to removal of the web overlying the cavity for entering the cavity of the first core and for then introducing the leading edge of the second roll into the feed means to be dispensed.

2. In a paper towel dispenser having a frame with a dispensing opening through which toweling web is dispensed, means on the frame for supporting first and second rolls of toweling for rotation about spaced apart axes and feed means supported by the frame and positioned between the axes and opening for controlling dispensing of toweling web from one roll through the opening, the improvement comprising:

each roll having a core with a peripheral cavity spaced axially from an end of the core and a web wound on the core to overlie the cavity,

- a sensing member supported by the frame and having a horizontal arm positioned over the first roll with a roller member on the arm engaging the first roll and entering the cavity of the first core on removal of the web overlying the cavity, and

- means responsive to the roller member entering the cavity for introducing the leading edge of the second roll into the feed means to be dispensed.

3. A paper towel dispenser as claimed in claim 2 in which the means responsive to the sensing means comprises:

a retaining means for engaging the leading edge of toweling on the second roll and supported by the frame for movement between a first position removed from the feed means and a second position adjacent the feed means at which the leading edge is introduced into the feed means to be dispensed, and means responsive to the sensing member for controlling the movement of the retaining means.

4. In a paper towel dispenser having a frame with a dispensing opening through which toweling web is dispensed, means on the frame for supporting first and second rolls of toweling for rotation about spaced apart axes and feed means supported by the frame and positioned between the axes and opening for controlling dispensing of toweling web from one roll through the opening, the improvement comprising:

each roll having a core with a peripherally extending cavity spaced axially from an end of the core and a web wound on the core to overlie the cavity,

- a sensing member supported by the frame and having a horizontal arm positioned over the first roll with a roller member on the arm engaging the first roll at a point spaced axially from the end of the roll a distance equal to the cavity spacing and entering the cavity of the first core on removal of the web overlying the cavity,

- a bar having an axial projection and a gripping member for engaging the leading edge of web of the second roll and being supported from the frame for movement along a predetermined path between a first position removed from the feed means and a second position adjacent the feed means at which the leading edge is introduced into the feed means to be dispensed, and

9

means responsive to the sensing member for controlling the movement of the bar.

5. A paper towel dispenser as claimed in claim 4 in which the means responsive to the sensing member comprises:

a notch in the sensing member aligned with the path of the axial projection when the roller member enters the cavity,

whereby the bar is retained in the first position until the first roll is depleted and then released for movement to the second position.

6. A paper towel dispenser as claimed in claim 4 in which each core comprises:

a cylindrical tube having a slot therein forming the cavity.

7. A paper towel dispenser as claimed in claim 4 in which each core comprises:

a cylindrical tube having a reduced diameter portion forming the cavity.

8. A paper towel dispenser as claimed in claim 4 in which each core comprises:

a cylindrical tube of a shorter axial length than the width of the roll, and

an insert member for insertion into the tube to increase the axial length of the assembled tube and member to the width of the roll,

10

the insert member having a portion of reduced diameter forming the cavity.

9. A roll adapted for use in a paper towel dispenser comprising:

a core formed of a cylindrical tube of shorter axial length than the width of the roll and an insert member for insertion into the tube to increase the axial length of the tube and member to the width of the roll,

the insert member having a portion of reduced diameter forming a peripheral cavity spaced axially from an end of the core, and

a web of toweling wound on the core and overlying the cavity.

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