Sept. 15, 1953 E. J. FRIDAY 2,652,302

SHEET MATERIAL DISPENSING MECHANISM

Filed June 2, 1948

2 Sheets-Sheet 1

Fig. 1.

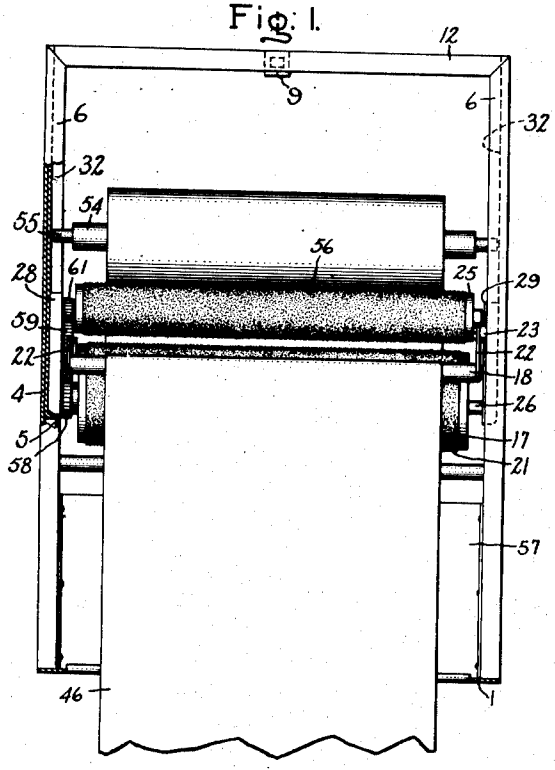


Fig. 2.

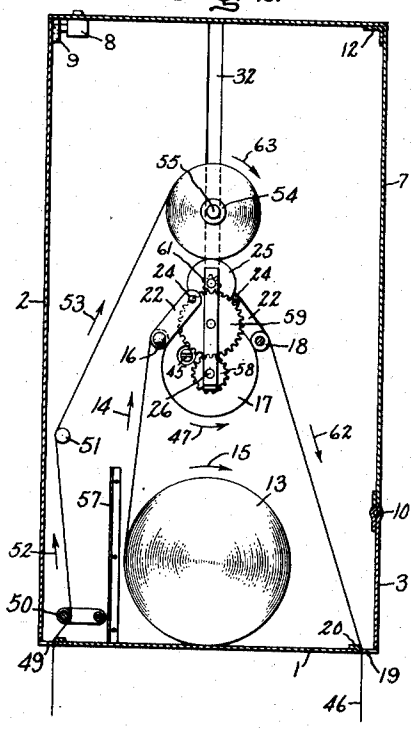


Fig. 3.

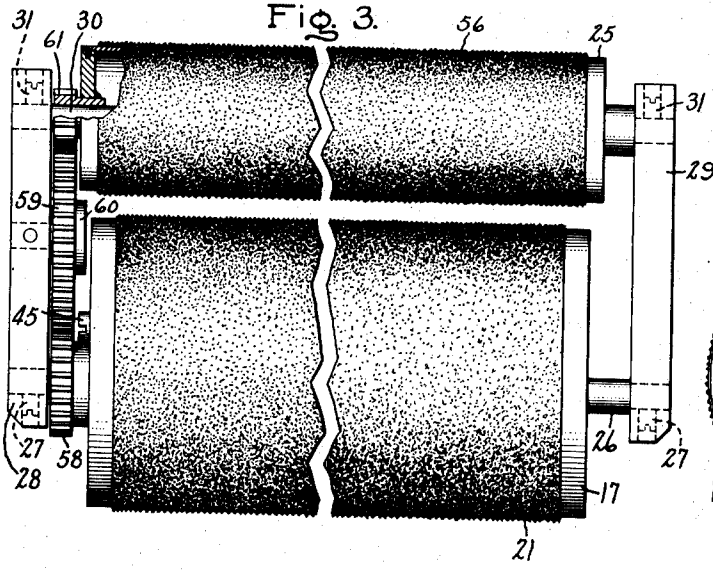
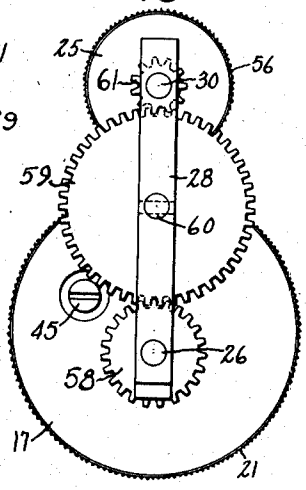


Fig. 4.



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SHEET MATERIAL DISPENSING MECHANISM

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Fig. 5.

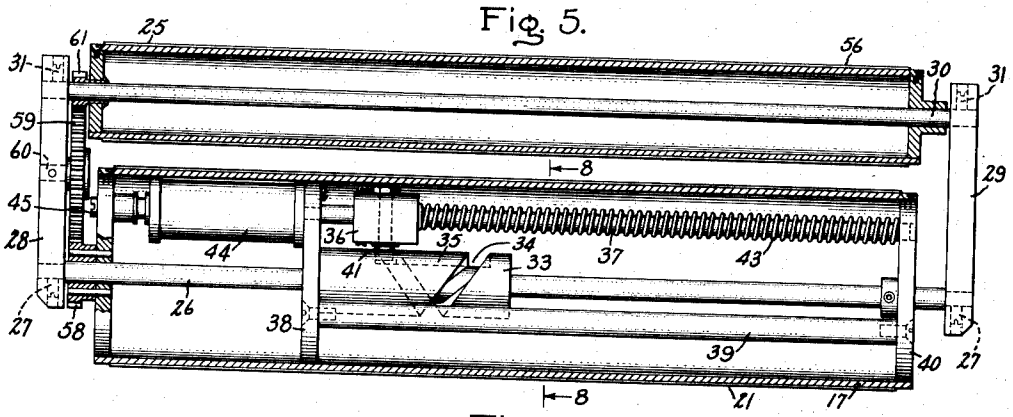


Fig. 6.

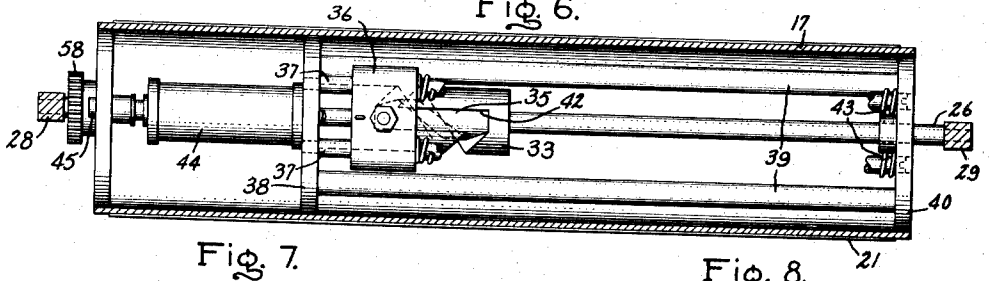


Fig. 7.

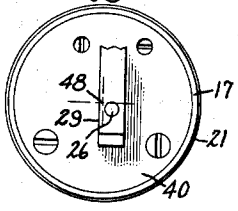


Fig. 8.

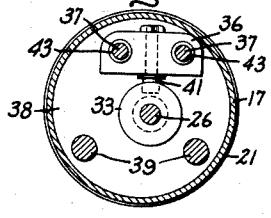


Fig. 9.

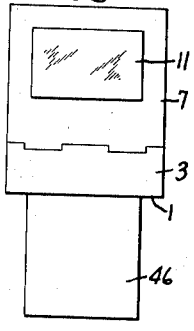
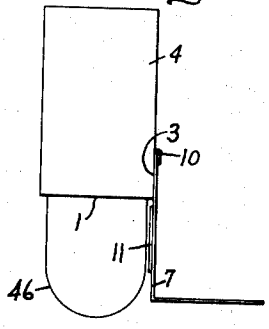


Fig. 10.



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UNITED STATES PATENT OFFICE

2,652,302

SHEET-MATERIAL DISPENSING MECHANISM

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Application June 2, 1948, Serial No. 30,710

11 Claims. (Cl. 312—38)

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My invention relates to sheet-material dispensing mechanisms and particularly to the type used to dispense a predetermined length of towel and then to latch the mechanism for a predetermined time before another length of towel can be obtained.

This application is somewhat similar to certain features to my copending application Serial No. 144,645 and to my abandoned application Serial No. 735,780.

An object of my invention is to provide an improved sheet-material dispensing mechanism.

Another object of my invention is to provide an improved sheet-material dispensing mechanism in which the material withdrawn at any one time is limited to a predetermined length and substantially the same length of material is rewound on a rewind roll.

A further object of my invention is to provide an improved towel-dispensing mechanism in which the towel withdrawn and rewound is substantially equal and limited to a predetermined length at any one time with a time delay of predetermined duration after each withdrawal of towel during which the mechanism is latched against operation.

Further objects and advantages of my invention will become apparent, and my invention will be better understood from the following description referring to the accompanying drawings, and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming part of this specification.

In the drawings, Fig. 1 is a front-elevational view, partly broken away, showing a sheet-material dispensing mechanism provided with an embodiment of my invention; Fig. 2 is a side-elevational view of the mechanism shown in Fig. 1 with the side panel of the container broken away; Fig. 3 is a front-elevational view, partly broken away, of the friction-roll assembly construction shown in Figs. 1 and 2; Fig. 4 is an end-elevational view of the assembly shown in Fig. 3; Fig. 5 is an elevational view of the friction-roll assembly shown in Figs. 1 to 4, partly broken away to show the regulating means including the metering and time-delay mechanism within this roll assembly; Fig. 6 is a plan view of the lower friction-roll shown in Fig. 5, partly broken away to show details of the regulating means; Fig. 7 is an end view of the right-hand end of the lower friction-roll shown in Fig. 5; Fig. 8 is a sectional view taken along line 8—8 of Fig. 5; Fig. 9 is a front-elevational view of the complete dispenser; and

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Fig. 10 is a side-elevational view of the dispenser with the front cover open.

Referring to the drawings, I have shown an embodiment of my improved sheet-material dispensing mechanism in the form of a reroll fabric towel dispenser. This type of towel dispenser is generally used in public or general use lavatories where users are not as a rule overly careful in the use of facilities provided. It, therefore, has been found desirable to limit the amount of clean toweling made available at any one time and to provide for a lapse of time between each available new supply of toweling. This time-delay feature tends to make the user more economical in the use of the towel and provides for an equitable distribution of towel among the various users.

Fabric toweling has been found to be most practical when it is arranged so that a predetermined length of clean towel supply is obtainable between predetermined time delays and provided with a rewinding system which will take up exactly the same amount of soiled towel into the container as the clean towel which is fed out, thereby maintaining a predetermined loop of towel depending from the container for use. It is also desirable that the used toweling and parts of the mechanism which come in direct contact with the soiled toweling be kept out of contact with the clean toweling. Such an arrangement is shown in Figs. 1 through 6, in which the mechanism includes a container having a bottom or base 1 preferably formed integral with an upwardly extending back 2 and a partial front 3. This container may be made entirely of pressed and formed sheet metal and, if desired, the various parts may be welded together at suitable abutting edges to provide a tight enclosure for the dispensing arrangement. The sides of the container preferably also are formed of sheet metal to provide a light rigid structure and to form a smooth exterior which can easily be kept clean. These sides are shown as comprising an outer sheet portion 4 and an inner sheet portion 5 formed of a single sheet with a small outer front wall portion 6. If desired, both sides and the back 2 may be made of a single metal sheet, although this is not essential. The edge of the inner sheet portion 5 of each side is secured to the back 2 in any suitable manner, as by welding or by tabs extending through slots in the back 2. To complete the enclosure of the mechanism and to facilitate replacement of the towel, the container is provided with a large closure 7, also preferably formed of sheet metal, which includes a front closure portion and a top closure portion provided with a suitable lock ele-

ment 8 for cooperation with a complementary lock element 9 on the back 2 to lock the closure securely to the back to prevent tampering with the mechanism. Preferably the closure is hinged to the front 3 by a suitable pintle or hinge pin 10, and a mirror 11 may be mounted on the outside of the front closure portion 6. In order to strengthen the container, a cross-brace 12, shown as a channel section element, is arranged to extend between the upper front corners of the sides and is secured thereto in any suitable manner, as by welding. This provides the desired rigidity to the container and also assures the correct spacing between the sides for rotatably and movably supporting parts of the dispensing mechanism.

This dispensing mechanism includes a removable friction-roll assembly demountable and replaceable as a unit and provided with an arrangement for metering and limiting the clean towel withdrawn and obtainable at any one time to a predetermined length, and in the illustrated system provides for simultaneously rewinding a length of towel on a rewind roll equal in length to that withdrawn. The towel adapted to be used in the illustrated arrangement is of suitable fabric and a roll 13 of clean towel is merely placed in the container and rests on the bottom 1 which rotatably supports it to permit unwinding the towel as shown by the arrow 14 which causes the roll 13 to turn as indicated by the arrow 15. The towel then passes over a towel-tensioning roll 16 around a part of the circumference of a rotatably mounted cylindrical supply friction-roll 17 in good frictional contact with the underside thereof, and over a second towel-tensioning roll 18 to a supply slot 19 formed in the lower part 1 of the container adjacent the front thereof. This opening preferably is formed by turning in the edge of the bottom plate 1, as shown at 20, to provide a smooth curved surface over which the towel is drawn.

In order to obtain the desired operation of this dispensing mechanism, the supply friction-roll 17 is formed with a high friction outer surface 21, which may comprise any suitable roughened surface, such as sprayed metallized surface, or a sheet of suitable sandpaper or emery paper securely fastened to the outside of the roll 17, and the pair of towel-tensioning rolls 16 and 18 are pivotally mounted angularly relative to the supply friction-roll 17 by hanger straps 22 to assure good contact between the towel and the surface 21 and allow movement of the towel only when the roll 17 is turned. These straps 22 are pivotally secured over bushings 23 to the sides 5 of the container by screws 24 to provide for moving the rolls 16 and 18 outwardly from the supply friction-roll 17 in threading the towel around these rolls when installing a new roll of clean towel. This tensioning roll supporting arrangement allows for a slight movement of the supply friction-roll 17 during normal operation and yet keeps the towel taut around it.

For sanitary reasons the friction-roll assembly is preferably made as shown in the drawings to include a supply friction-roll 17 and a cylindrical rewind friction-roll 25 spaced apart a small distance so that neither the used toweling nor the rewind friction-roll, which contacts the used toweling, will contact the fresh towel supply or the supply friction-roll. This maintains a complete physical separation between the unused and used portions of the towel within the cabinet.

Repairs to the friction-roll assembly are facilitated by making the assembly readily removable from the cabinet. In the illustrated construction, the supply friction-roll 17 is rotatably mounted on a mounting rod 26 secured at each end, in any suitable manner, as by setscrews 27 in guide shoe members 28 and 29. The rewind friction roll 25 is rotatably mounted on a second mounting rod 30 spaced from the mounting rod 26 and secured in any suitable manner, as by setscrews 31, to the guide shoe members 28 and 29. This assembly of friction rolls on the pair of mounting rods and guide shoe members is unitarily removably mounted in the cabinet on a pair of upwardly extending mounting guide tracks 32 on opposite sides of the cabinet in which the guide shoe members 28 and 29 are vertically slidably fitted.

In order to obtain the desired operation of the friction rolls and to provide advantages of my invention, both friction rolls are cylindrical in form with substantially closed ends. The desired turning of the supply friction-roll 17 to provide for the limited withdrawal of towel from the container is regulated by the operation of a metering and time-delay mechanism mounted within and enclosed by the roll 17 and interposed between and connected to the friction roll 17 and its mounting rod 26. The metering and time-delay features are illustrated in detail in Figs. 5, 6, 7, and 8, and include an arrangement for permitting a predetermined rotation of the supply friction-roll 17 and for latching the supply friction-roll 17 against rotation for a predetermined time after each of these predetermined rotations. This comprises a cam 33 mounted on the mounting rod 26 and rigidly secured thereto in any suitable manner. This cam 33 is formed with a spiral cam portion of substantially one complete turn, shown as a spiral groove 34. The ends of the spiral cam portion 34 are connected together by a longitudinally extending cam portion 35, shown as a groove in the cam 33. A cam follower 36 is longitudinally slidably mounted on a pair of spaced apart guide rods 37 which are held in nonrotatable positions relative to the supply friction-roll 17 by a mounting plate 38 secured to the inner surface of the roll 17 in any suitable manner, as by welding, press fit, or otherwise. This plate 38 is further firmly held in position by a pair of spacing rods 39 secured at one end to the mounting plate 38 and at the other end to an end closure plate 40 rigidly mounted in an end of the supply friction-roll 17. The ends of the guide rods 37 adjacent the mounting plate 38 are secured thereto and the other ends thereof are secured to the end closure plate 40. In order to provide the desired travel of the cam follower 36, it is provided with a cam engagement element formed as a pin 41 which extends into the cam groove, such that relative rotation between the cam 33 and the follower 36 will result in the follower pin moving along the spiral cam portion 34 from one end to the other where it is stopped by the wall 42 of the longitudinally extending cam portion 35. The cam follower then is adapted to be biased resiliently along the longitudinal cam portion 35 toward the mounting plate 38 under the action of a pair of compression coil springs 43 arranged one on each of the guide rods 37 and held under compression between the follower 36 and the friction roll end plate 40. This movement of the cam follower would be almost instantaneous were not a delaying action provided, and a suitable time-delay member, such as a dashpot 44, is adapted to give the desired time delay for the return movement of the follower. Adjustment

of the time delay between successive rotations of the supply friction-roll can be made to provide the desired delay interval by adjusting a relief screw 45. In this manner, rotation of the supply friction-roll 17 around the mounting rod 26 carries the cam follower pin 41 around the spiral cam groove 34 and the follower 36 slides longitudinally of the guide rods 37, thereby compressing the springs 43 until such movement is stopped by engagement of the follower pin 41 with the longitudinal cam groove side 42. This limits further rotation of the follower around the cam and thereby limits the rotation of the friction roll 17 to the same amount, predetermined by the spiral cam portion 34. With such an arrangement, when towel 46 is pulled through the supply slot 19, it rotates the supply friction-roll 17, as indicated by the arrow 47, until the supply friction-roll is stopped by engagement of the follower pin 41 with the longitudinal cam groove wall 42. This prevents further rotation of the supply friction-roll 17 and the frictional force between the friction surface 21 and the towel 46 prevents further withdrawal of towel from the container until the follower pin 41 has traveled through the longitudinal groove 35 to the other end thereof adjacent the mounting plate 38. This provides the desired predetermined time delay between withdrawals of clean towel.

In order to assure further the proper operation of the metering mechanism, I have found it desirable to mount the supply friction-roll 17 eccentrically on the mounting rod 26 and relative to the cam 33 which is concentric with the rod 26. The amount of this eccentricity may be varied but has been found to provide the desired effect of producing a turning moment about the rod 26 by the weight of the roll 17 and the equipment in this roll so as to cause the cam follower pin 41 to be biased slightly away from the side 42 of the longitudinally extending cam groove portion 35 furthest from the dashpot when displaced substantially the radius of the mounting rod from its center, as indicated by the point 48 in Fig. 77. This provides a release of the follower pin 41 from the side 42 of the cam groove and prevents the pin from becoming frozen against the flat side 42 of the cam groove 35 after a new length of towel has been pulled out of the container, and allows the follower pin 41 to move freely along the longitudinal cam groove portion 35.

With this type towel dispenser, it is desirable that only a limited length of towel be left exposed and that soiled towel be rewound for removal from the container for replacement with a new roll when the clean towel roll is used up. In addition, it is desirable that the length of usable towel extending from the container should remain the same at all times by taking up just the same length of used towel as the length of clean towel which is withdrawn, to prevent both the shortening of the towel loop available for use and its lengthening and possible dragging on the floor. This is obtained by providing a predetermined length of towel 46 extending as a loop which is simultaneously rewound to the same extent as it is withdrawn from the container. In thus rewinding used towel, it is desirable that it be automatically smoothed out and straightened before it is rerolled. In order to obtain this effect, the towel is arranged to pass into the container through a return slot 49 made similar to the supply slot 19 and located in the lower

part of the container adjacent the back end thereof. This soiled towel is then drawn over a towel-straightening rod 50 adjacent the lower back part of the container and extending transversely between the sides thereof. This straightening rod 50 preferably is formed with spiral grooves or threads extending in opposite directions from the center towards the ends of the rod. The towel then is drawn over a second straightening rod 51 as indicated by the arrows 52 and 53. This second rod 51 is spaced upwardly from the rod 50 and extends transversely between the sides of the container preferably slightly nearer the back 2 than the rod 50 to obtain a slight wrapping action of the towel around these two rods to produce more effectively the desired smoothing out of the towel. The towel passes from around the second straightening rod 51 to a rewind roll 54 which is rotatably supported by a mounting rod 55 journaled rotatably and in upwardly slidable relation in the guide tracks 32 in the container sides 5. This provides for vertical movement of the rewind roll as the towel increases its diameter and for supporting the rewind roll in frictional contact with the rewind friction-roll 25 which also is provided with a friction surface 56 similar to the surface 21 on the supply friction-roll 17.

In order further to assure against contact of soiled toweling with fresh toweling in the cabinet, a baffle or spacing wall 57 is secured to the side walls and extends upwardly from the bottom 2 to a distance sufficient to separate the toweling extending from the supply 13 to the rod 16 from the toweling extending from the return slot 49 to the rewind roll 54. As shown, this baffle 57 need not extend completely to the rewind roll or even to the rod 16, as the rods 50 and 51 tend to hold the soiled toweling away from the fresh toweling.

The length of towel taken-up by rewinding on the rewind roll 54 is kept equal to that withdrawn from the cabinet by driving the rewind friction-roll 25 from the supply friction-roll 17 to maintain the same circumferential linear surface travel of each of these friction-rolls. This equal travel may be obtained by any suitable drive and is shown as being provided by a gear 58 secured to the supply friction-roll 17 having a driving engagement with an idler gear 59 rotatably mounted on a stub shaft 60 secured to the guide shoe member 28, and having a driving engagement with a gear 61 secured to the rewind friction-roll 25. The gear ratios of the gears 58 and 61 are directly proportional to the respective diameters of the supply and rewind friction-rolls to which they are secured, and thereby provide for the equal circumferential linear travel of these two friction-rolls.

Whenever towel 46 is pulled out of the container it will pass from the clean towel roll 13 successively as indicated by the arrows 15, 14, 47, 62, 52, 53, and around the rewind roll 54, such that, as the supply friction-roll 17 turns because of its contact with the towel as it is drawn over its surface, the towel in frictional contact with the upper side of the rewind friction-roll 25 will be driven for rotating the rewind roll 54, as indicated by the arrow 63. Since only so much towel 46 is withdrawn from the container as is measured by a turn of the friction roll 17 metered by the travel of the cam follower from one end to the other of the cam spiral groove 34, exactly the same length of towel is wound on the rewind roll 54, as the

same peripheral or circumferential length of friction surface 56 moves as that of the friction surface 21 which measures the towel withdrawn. This automatically keeps the loop of the towel 46 at the same desired length, and since the friction roll 17 is not reversible, it acts as a brake and prevents reverse rotation of the rewind roll.

My friction roll and its mounting mechanism is particularly advantageous should it be found desirable for any reason to replace the friction-roll assembly. It is only necessary to open the cabinet and to slide the rewind roll 54 and the supply friction-roll assembly out of the guide tracks 32 at the top of the cabinet, and then to replace the friction-roll assembly by the insertion of a new friction-roll assembly, all without disturbing the clean towel roll. The timing and metering meachinism is the only part of the mechanism which may wear out in time, and since it is all within the supply friction-roll, it can be replaced at any time without tools by merely replacing the friction roll assembly as described above. In addition, with my mechanism, if the follower pin 41 should for any reason snap, thereby preventing the operation of the timing and metering mechanism, the arrangement remains operable until a new friction-roll assembly can be installed. The rewinding feature continues as effective as with the timing mechanism, since the friction roll continues to be rotatable and functions to rewind the same length of towel as is paid out of the cabinet, thus further enhancing the utility of my improved cabinet.

While I have illustrated and described a particular embodiment of my invention, modifications thereof will occur to those skilled in the art. I desire it to be understood, therefore, that my invention is not to be limited to the particular arrangement disclosed, and I intend in the appended claims to cover all modifications which do not depart from the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A friction-roll assembly for a sheet-material dispensing mechanism having a pair of mounting guide-shoe members, a pair of spaced rods mounted on and extending between said mounting members so as to secure together said mounting members, a sheet-material rewind friction roll mounted on one of said rods, a cylindrical sheet-material supply friction-roll formed with substantially closed ends and mounted on the other of said rods, a driving connection means connecting said rewind and said supply friction-rolls, and regulating means arranged within and enclosed by said supply friction-roll and interposed between and connected to said supply friction-roll and said other of said rods including a metering mechanism for limiting rotation of said supply friction-roll to a predetermined amount at any one time and a time-delay device connected to said metering mechanism for providing a desired time delay between successive rotations of said supply friction-roll.

2. A friction-roll assembly for a sheet-material dispensing mechanism having a pair of mounting members, a sheet-material rewind friction-roll extending between said mounting members, means for rotatably supporting said rewind friction-roll on said mounting members and securing together said mounting members, a cylindrical sheet-material supply friction-roll formed with substantially closed ends and extending between said mounting members, means for rotatably supporting said supply friction-roll on said mounting members in spaced relation to said rewind friction-roll and connecting together said mounting members, driving connection means connecting said rewind and said supply friction-rolls, and means arranged within and enclosed by one of said friction-rolls including a metering mechanism and a time-delay device interposed between and connected to said one friction-roll and to said supporting means for said one friction-roll for limiting rotation of said one friction-roll to a predetermined amount at any one time with said time-delay device operably connected to said metering mechanism for providing for a desired time delay between successive rotations of said one friction-roll.

3. A unitarily demountable friction-roll assembly for a sheet-material dispensing mechanism having a pair of mounting shoe members, a cylindrical sheet-material rewind friction-roll formed with substantially closed ends and extending between said mounting members, means for rotatably supporting said rewind friction-roll on said mounting members and connecting together said mounting members, a cylindrical sheet-material supply friction-roll formed with substantialy closed ends and extending between said mounting members, means for rotatably supporting said supply friction-roll on said mounting members and connecting together said members, a driving connection connecting together said rewind and said supply friction-rolls, and means arranged within and enclosed by one of said friction-rolls and interposed between and connected to said one friction-roll and to said mounting means for said one friction-roll for limiting rotation of said one friction-roll to a predetermined amount at any one rotation thereof and for providing a desired time delay between successive rotations of said one friction-roll.

4. A unitarily demountable friction-roll assembly for a sheet-material dispensing mechanism having a pair of guide-shoe members, a cylindrical sheet-material rewind friction-roll extending between said guide-shoe members, means for rotatably supporting said rewind friction-roll on said guide-shoe members and connecting together said guide-shoe members, a cylindrical sheet-material supply friction-roll formed with substantially closed ends and extending between said guide-shoe members, means for rotatably supporting said supply friction-roll on said guide-shoe members and connecting together said guide-shoe members, means for driving said rewind friction-roll from said supply friction-roll, and regulating means arranged within and enclosed by said supply friction-roll and interposed between and connected to said supply friction-roll and to said mounting means therefor including a metering mechanism for limiting rotation of said supply friction-roll to a predetermined amount at any one rotation thereof and a time-delay device connected to said metering mechanism for providing a desired time delay between successive rotations of said supply friction-roll.

5. A sheet-material dispensing mechanism having a mounting member including a cabinet, said mechanism including a friction-roll assembly having mounting guide members removably slidably mounted in said cabinet, a pair of spaced mounting rods extending between and secured to said guide members, a cylindrical sheet-ma-

terial rewind friction-roll mounted for rotation relative to said mounting guide members and supported on one of said mounting rods, a cylindrical sheet-material supply friction-roll having substantially closed ends and being rotatably mounted relative to said mounting guide members on the other of said mounting rods, means arranged for passage of sheet material from a supply into contact with a part of said supply friction-roll for rotating said supply friction-roll on withdrawal of sheet material from said cabinet, means for driving said rewind friction-roll from said supply friction-roll, said friction-rolls being spaced and of such size to provide clearance therebetween, a sheet-material rewind roll, means including a third mounting rod for rotatably mounting said sheet-material rewind roll in said cabinet in friction contact with said rewind friction-roll and constructed for passage of sheet material around said sheet-material rewind roll, and a regulating means arranged within and enclosed by said supply friction-roll including a metering mechanism interposed between and connected to said supply friction-roll and said other of said mounting rods for limiting each rotation of said supply friction-roll to a predetermined amount thereby limiting the length of sheet material obtainable at any one time from said cabinet to a predetermined amount with a time-delay device connected to said metering mechanism for providing a predetermined time delay between successive rotations of said supply friction-roll.

6. A sheet-material dispensing mechanism having a mounting member including a cabinet, upwardly extending mounting guide tracks on opposite sides of said cabinet, a frictional-roll assembly having a pair of guide shoe members, each of said guide shoe members being adapted slidably to engage a separate one of said mounting tracks, a pair of spaced rods extending between and mounted on said shoe members and securing said shoe members together, a cylindrical sheet-material rewind friction-roll mounted on one of said rods, a cylindrical sheet-material supply friction-roll having substantially closed ends and being mounted on the other of said rods, means arranged in said cabinet for guiding passage of sheet material from a supply and into contact with a part of said supply friction-roll for rotating said supply friction-roll on withdrawal of sheet material from said cabinet, means for driving said rewind friction-roll from said supply friction-roll, a regulating means arranged within and enclosed by said supply friction-roll including a metering mechanism interposed between and connected to said supply friction-roll and to said other of said rods for limiting rotation of said supply friction-roll to a predetermined amount at any one rotation thereof thereby limiting the length of sheet material withdrawn at any one time from said cabinet, and means connected to said metering mechanism for providing a desired time delay between successive rotations of said supply friction-roll.

7. A sheet-material dispensing mechanism as set forth in claim 6 wherein said metering mechanism includes a cam nonrotatably mounted on said other of said rods and a cam follower arranged in engagement with said cam and mounted for rotation with said supply friction-roll for limiting rotation of said supply friction-roll at any one rotation thereof.

8. A towel cabinet having a supply slot and a return slot for the passage of towel from a clean

towel supply roll adapted to be contained in said cabinet out of the supply slot and back into said cabinet through the return slot, a towel dispensing mechanism for metering and regulating the available towel extending between the supply and return slots outside the cabinet, upwardly extending mounting guide tracks on opposite sides of said cabinet on the inner sides thereof, said mechanism including a removable friction-roll assembly having guide shoe members adapted slidably to engage said mounting tracks providing for removal from and adjustment of the position of said mechanism in said cabinet, a pair of spaced mounting rods extending between and secured to both of said guide shoe members, a cylindrical towel rewind friction-roll rotatably mounted on one of said mounting rods, a cylindrical towel supply friction-roll having substantially closed ends and being rotatably mounted on the other of said mounting rods, means for driving said towel rewind friction-roll from said towel supply friction-roll, said fricton-rolls being spaced apart, a towel rewind roll, means including a third mounting rod rotatably mounted in said guide tracks and arranged over said towel rewind friction-roll for rotatably supporting said towel rewind roll in frictional contact with said towel rewind friction-roll through the towel on said rewind roll and for passage of towel from the return slot around said rewind roll and in contact with said towel rewind friction-roll, and a regulating means arranged within and enclosed by said towel supply friction-roll including a metering mechanism interposed between and connected to said towel supply friction-roll and to said other mounting rod for limiting each rotation of said towel supply friction-roll to a predetermined amount thereby limiting the length of clean towel obtainable at any one time from said cabinet to a predetermined amount.

9. A sheet-material dispensing mechanism having a mounting member including a cabinet, upwardly extending guide tracks on opposite inner sides of said cabinet, a friction-roll assembly having guide shoe members adapted slidably to engage said mounting tracks, a pair of spaced mounting rods secured to both of said guide shoe members forming a mounting unit, a cylindrical sheet-material rewind friction-roll rotatably mounted on one of said mounting rods, a cylindrical sheet-material supply friction-roll having substantially closed ends and being rotatably mounted on the other of said mounting rods, means arranged for passage of sheet material from a supply and into contact with a part of said supply friction-roll for rotating said supply friction-roll on withdrawal of sheet material from said cabinet, means for driving said rewind friction-roll from said supply friction-roll, said friction-rolls being spaced to provide clearance therebetween, a sheet-material rewind roll, means including a third mounting rod rotatably supported in engagement with said guide tracks and above said rewind friction-roll for rotatably mounting said rewind roll in frictional contact with said rewind friction-roll for passage of sheet material around said rewind roll and in contact wtih said rewind friction-roll, a regulating means arranged within and enclosed by said supply friction-roll including a metering mechanism for limiting rotation of said supply friction-roll to a predetermined amount thereby limiting the length of sheet-material obtainable at any one time from said cabinet to a predetermined amount, said metering mechanism including a cam nonro-

tatably mounted on said other mounting rod and having a spiral portion of substantially one complete turn with a longitudinally extending portion connecting together the ends of said spiral cam portion, a cam follower nonrotatably and longitudinally movably mounted relative to and within said supply friction-roll arranged in engagement with said cam for limiting rotation of said supply friction-roll at any one time as measured by the travel of said cam follower along said cam spiral portion, means for providing a desired time delay for movement of said cam follower along said cam longitudinal portion, and means for resiliently biasing said cam follower against the action of said time-delay means during return movement thereof along said cam longitudinal portion.

10. A towel dispensing mechanism having a supporting member including a cabinet with a supply slot and a return slot, upwardly extending mounting guide tracks on opposite inner sides of said cabinet, means for metering and regulating the available towel extending between the supply and return slots outside said cabinet and including a friction-roll assembly having guide shoe members slidably engaging said mounting tracks, a pair of spaced mounting rods secured to said guide shoe members forming a mounting unit, a cylindrical towel rewind friction-roll rotatably mounted on one of said mounting rods, a cylindrical towel supply friction-roll having substantially closed ends and being rotatably mounted on the other of said mounting rods, means arranged for passage of towel from a supply and into contact with a part of said supply friction-roll for rotating said supply friction-roll on withdrawal of towel from said cabinet, means for driving said towel rewind friction-roll from said towel supply friction-roll, said friction-rolls being spaced to provide clearance therebetween, means including a third mounting rod rotatably supported in engagement with said guide tracks above said rewind friction-roll for rotatably mounting said towel rewind roll for passage of towel from the return slot around said rewind roll and in contact with said rewind friction-roll for rewinding a predetermined length of towel, a regulating means arranged within and enclosed by said supply friction-roll including a metering mechanism for limiting rotation of said supply friction-roll to a predetermined amount thereby limiting the length of towel obtainable at any one time from said cabinet, said metering mechanism including a cam nonrotatably mounted on said other of said mounting rods and having a spiral portion of substantially one turn with a longitudinally extending portion connecting the ends of said spiral portion, a cam follower nonrotatably and longitudinally movably mounted relative to and within said supply friction-roll arranged in engagement with said cam for limiting rotation of said supply friction-roll at any one time as measured by the travel of said cam follower along said cam spiral portion, means for providing a desired time delay for return movement of said cam follower along said longitudinal portion, and means for resiliently biasing said cam follower against the action of said time-delay means during return movement thereof along said cam longitudinal portion.

11. A towel dispensing mechanism having a supporting member including a cabinet with a supply slot and a return slot and a separating partition means extending between the supply slot and the return slot transversely of said cabinet for preventing contact between towel entering said cabinet through the return slot and towel passing out of said cabinet from a towel supply, upwardly extending mounting guide tracks on opposite inner sides of the cabinet, said mechanism including a removable friction-roll assembly having guide shoe members slidably engaging said mounting tracks providing for removal of said mechanism from said cabinet for repair and for renewal of a clean towel supply, a pair of spaced mounting rods secured to said guide shoe members forming a mounting unit, a towel rewind friction-roll rotatably mounted on one of said mounting rods, a cylindrical towel supply friction-roll having substantially closed ends and being rotatably mounted on the other of said mounting rods, means including gearing for driving said rewind friction-roll from said supply friction-roll, said friction-rolls being spaced to provide clearance therebetween, means including a third mounting rod rotatably supported in engagement with said guide tracks above said rewind friction-roll, a towel rewind roll mounted on said third mounting rod for rotation and for passage of towel from the return slot around said rewind roll and in contact with said rewind friction-roll for rewinding towel on said rewind roll, a regulating means arranged within and enclosed by said supply friction-roll including a metering and time-delay mechanism for limiting each rotation of said supply friction-roll to a predetermined amount thereby limiting the length of clean towel obtainable at any one time from said cabinet, said metering mechanism including a cam rigidly mounted on said other mounting rod and having a spiral portion of substantially one turn with a longitudinally extending portion connecting the ends of said spiral portion, a mounting plate rigidly secured within said supply friction-roll, a pair of guide rods extending within said supply friction-roll between and secured to said mounting plate and one of said closed ends of said supply friction-roll, a cam follower longitudinally slidably mounted on said guide rods and extending into engagement with said cam, means including a compression coil spring on each of said guide rods between said follower and said one end of said supply-friction-roll for resiliently biasing said follower toward said mounting plate, and said time-delay mechanism including a dashpot having a plunger therein secured to said cam follower for providing a desired time delay for movement of said follower along said cam longitudinal portion under pressure of said resilient spring biasing means.

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