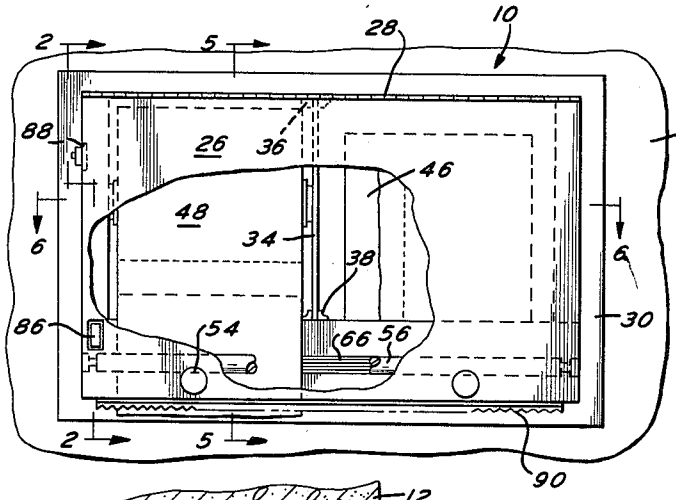
Oct. 5, 1965 C. A. CIERVO 3,210,139

ELECTRICALLY OPERATED DISPENSER

Filed April 21, 1964 2 Sheets-Sheet 1

FIG. 1



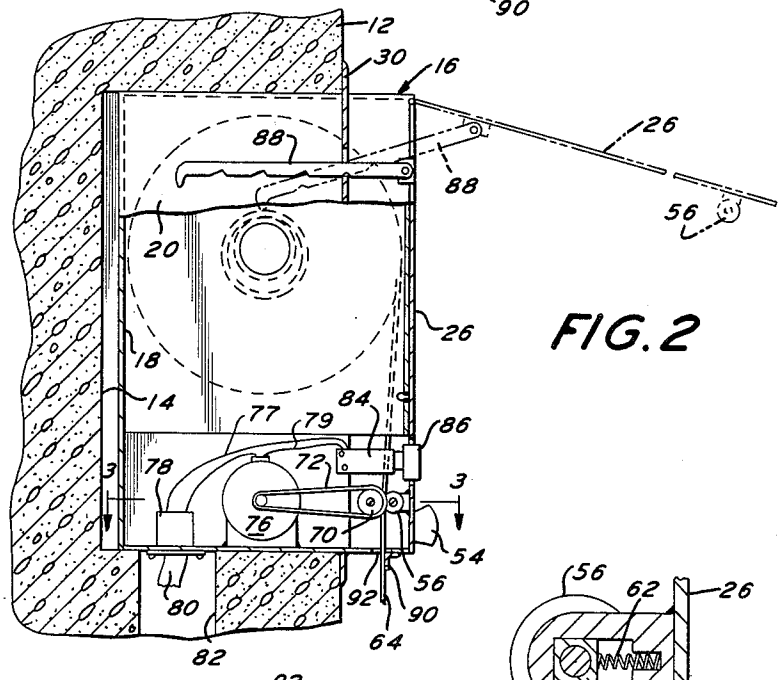


FIG. 2

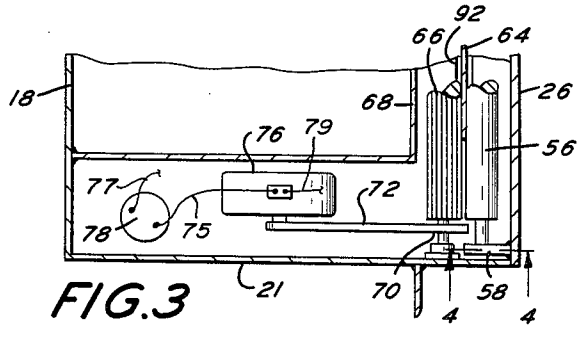


FIG. 3

FIG. 4

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ELECTRICALLY OPERATED DISPENSER

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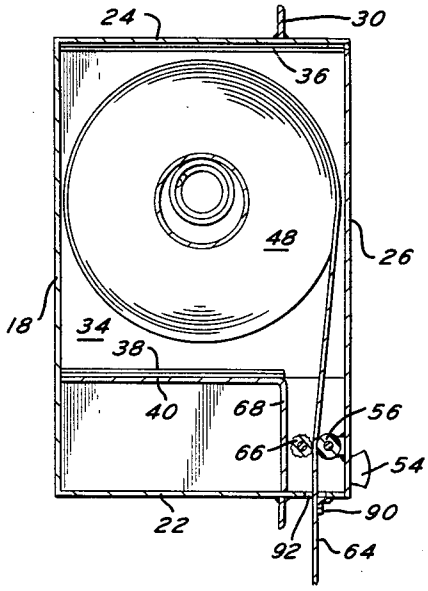
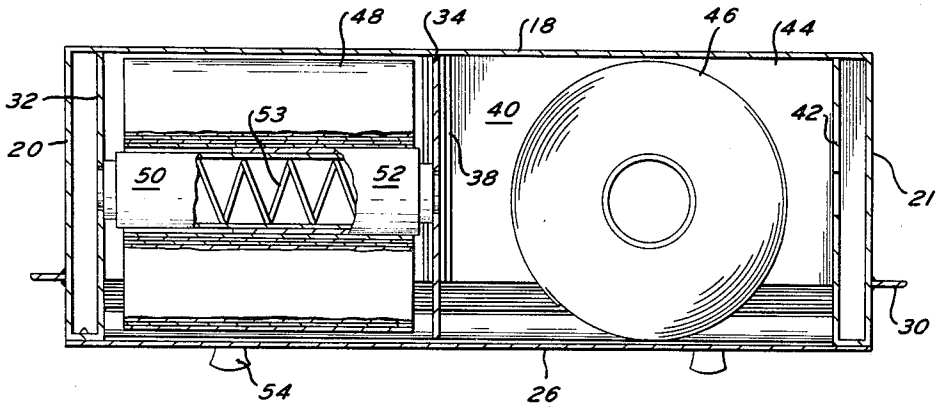


FIG. 5

FIG. 6



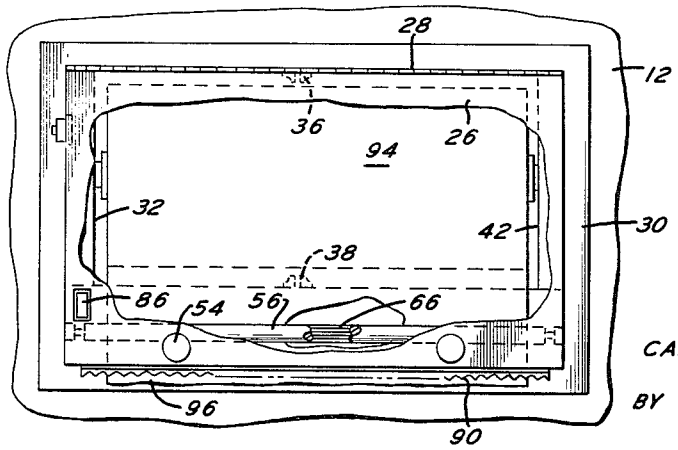


FIG. 7

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United States Patent Office 3,210,139 Patented Oct. 5, 1965

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ELECTRICALLY OPERATED DISPENSER

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Filed Apr. 21, 1964, Ser. No. 361,343
5 Claims. (Cl. 312—39)

This invention relates to an electrically operated dispenser, and more particularly to an electrically operated dispenser of material in sheet form such as paper toweling, tissue paper, wall paper, etc.

The dispenser of the present invention is preferably of the wall mounted type wherein the housing for the dispenser is substantially disposed within a recess in a wall or other supporting surface. The dispenser of the present invention is particularly adapted for conversion from dispensing tissue paper to dispensing of paper toweling with a minimum of effort, notwithstanding the fact that the paper toweling may be twice as wide as the tissue paper.

The dispenser of the present invention is preferably provided with a movable front wall containing a roller on its inner surface. The housing preferably contains an electrically operated roller adapted to mate with the roller on the front wall. The material to be dispensed is rotatably supported about an axis disposed above the plane of the rollers. Since the front wall is movable, there is no threading of the material to be dispensed between the rollers.

Dispensing will continue so long as a switch remains in a closed position. The switch is preferably a push button on a front portion of the housing for the dispenser and is electrically connected to a motor which rotates one of the rollers. Heretofore, mechanical dispensers included complex linkages with interlocks so that only a predetermined length of material is dispensed each time the mechanism is actuated. Such devices are not practical for home use wherein the user desires the dispensing to continue until the desired length of material has been dispensed. While the dispenser of the present invention is particularly adapted for use in bathrooms and in the kitchens of residential buildings, it may be utilized in other environments such as in stores and the like.

It is an object of the present invention to provide an electrically operated dispenser of sheet material.

It is another object of the present invention to provide a dispenser of sheet material which enables the material to be continuously dispensed until the user stops the dispensing.

It is another object of the present invention to provide a dispenser for sheet material which does not require threading of the sheet material between rollers or the like.

It is another object of the present invention to provide an electrically operated dispenser for tissue paper which can be converted in a convenient, rapid manner for dispensing paper toweling of greater width.

It is still another object of the present invention to provide an electrically operated dispenser adapted to be mounted within a recess in a wall or other supporting surface.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not

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limited to the precise arrangements and instrumentalities shown.

FIGURE 1 is a front elevation view of a wall mounted electrically operated dispenser in accordance with the present invention.

FIGURE 2 is a sectional view taken along the line 2—2 in FIGURE 1.

FIGURE 3 is a sectional view taken along the line 3—3 in FIGURE 2.

FIGURE 4 is a sectional view taken along the line 4—4 in FIGURE 3.

FIGURE 5 is a sectional view taken along the line 5—5 in FIGURE 1.

FIGURE 6 is a sectional view taken along the line 6—6 in FIGURE 1.

FIGURE 7 is a front elevation view of the dispenser with a portion of the front wall broken away to illustrate internal details when the sheet material is paper toweling, or the like.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in FIGURE 1 an electrically operated dispenser designated generally as **10** mounted in a recess **14** in a wall **12** or the like.

The dispenser **10** includes a housing designated generally as **16**. Housing **16** includes a rear wall **18** extending between side walls **20** and **21**. Housing **16** also includes a bottom wall **22**, a top wall **24**, and a front wall **26**. Front wall **26** is pivotally secured to the top wall **24** by a hinge **28** or the like. A flange **30** extends outwardly from the walls **20, 21, 22** and **24**. As shown more clearly in FIGURES 2 and 5, the flange **30** is disposed in a plane between the planes of the walls **18** and **26**, but closer to the plane of the wall **26**.

As shown more clearly in FIGURES 1 and 6, partitions **32** and **34** are provided. Partition **32** is permanent whereas partition **34** is readily removable. Partition **34** is disposed between lugs **36** on the top wall **24** and lugs **38** on a false bottom wall **40**. A partition **42** is provided adjacent the wall **21**. The partitions **34** and **42** define a storage chamber **44** wherein a spare roll of tissue paper **46** may be stored.

A roll of tissue paper **48** is rotatably supported by the partitions **32** and **34**. This is accomplished by telescoping tubes **50** and **52** disposed within the core of the roll **48** and biased apart by spring **53**. Each of the tubes **50** and **52** have projections on their ends extending into aligned holes in the partitions **32** and **34**.

As shown more clearly in FIGURE 4, a roller **56** is rotatably supported by bracket **58** on the inner surface of front wall **26**. The reduced diameter ends of the roller **56** are supported in a bearing **60** slidably received in a slot in the bracket **58**. A spring **62** biases the bearing **60** away from the front wall **26**. Movement of the front wall **26** is accomplished by one or more knobs **54** thereon.

The sheet **64** of the paper or other material of the roll **48** is disposed between the roller **56** and a driven roller **66**. Roller **66** is provided with a grooved or roughened periphery and is rotatably supported by the side walls **20** and **21**. As shown more clearly in FIGURE 3, the roller **66** is disposed forwardly of the partition **68**. Partition **68** extends from the bottom wall **22** to the false bottom wall **40**, as shown more clearly in FIGURE 5.

A pulley **70** is secured to the roller **66**. A flexible belt **72** extends around pulley **70** and around the output shaft on a motor **76**. Due to the relative sizes of the pulley **70** and the output shaft on the motor **76**, roller **66** will be driven at a lower speed. The motor **76** is supported by the bottom wall **22**.

A socket **78** is supported by the bottom wall **22** and is electrically coupled to wires extending through electrical conduit **80**. Electrical conduit **80** extends through a passageway **82** in the wall **12**. A suitable conductor **75** extends between the socket **78** and the motor **76**. A suitable conductor **77** extends between the socket **78** and the switch **84**. A suitable conductor **79** extends between the switch **84** and the motor **76**. Thus, the switch **84** is in series with the motor **76**. Switch **84** is supported so that it has a pushbutton operator **86** which extends through an aperture in the front wall **26** when the latter is in its closed position. As long as the pushbutton **86** is depressed, switch **84** will remain closed thereby causing the motor **76** to drive roller **66**.

When it is desired to replace the roll **48** or otherwise have access to the interior of the housing **16**, the knob **54** provides a convenient means for applying force to the front wall **26** to move the same to the phantom position illustrated in FIGURE 2. When the wall **26** is in the phantom position illustrated in FIGURE 2, a latch **88** having one end pivotably secured thereto is moved to a position whereby it will retain the wall **26** in said phantom position. When it is desired to move the front wall **26** to its solid line position in FIGURE 2, the latch **88** is manually rotated in a clockwise direction in FIGURE 2 while the front wall **26** is permitted to be moved to its closed position.

As shown more clearly in FIGURES 2 and 5, an elongated slot **92** is provided in the bottom wall **22** below the rollers **56** and **66**. The sheet **64** of paper or other material to be dispensed extends through the slot **92**. Immediately forwardly of the slot **92**, there is provided a serrated edge **90** against which the sheet **64** may be pulled to separate the amount desired from the remainder of the material on roll **48**. The frictional engagement of the rollers **56** and **66** with the sheet **64** prevents the sheet **64** from tearing along perforation lines above said rollers.

The operation of the apparatus heretofore discussed is believed to be obvious in view of the above description. Hence, only a short resume is believed to be necessary. Thus, with the elements in the solid line position in FIGURES 1–6, the dispensing is initiated by pressing on the pushbutton **86**. When pushbutton **86** is activated, switch **84** is closed thereby completing the circuit to the motor **76**. Motor **76** rotatably drives roller **66** which cooperates with roller **56** to cause the sheet **64** to be unwound from the roll **48**. Such dispensing of sheet **64** will continue until pushbutton **86** is permitted to assume its normal position wherein switch **84** is open. Thereafter, the user may pull on the sheet **64** so that it is engaged with the serrated edge **90** so as to effect a tearing of the sheet **64** at a point below the rollers **56** and **66**.

When it is desired to replace the roll **48**, the front wall **26** is moved to the phantom position in FIGURE 2 and retained in such position by the latch **88**. Thereafter, the core for roll **48** may be separated from the tubes **50** and **52** in a conventional manner and roll **46** substituted for roll **48**. Thereafter, the front wall **26** is moved to the solid line position in FIGURE 2 as described above.

The dispenser **10** may be converted for use in dispensing paper toweling which has a width substantially twice the width of the rolls **46** and **48**. Thus, in FIGURE 7, the dispenser **10** is illustrated with the partition **34** removed and a roll **94** of paper toweling or the like is rotatably supported by the partitions **32** and **42**. The sheet **96** of the paper toweling is disposed between the rollers **56** and **66** in the same manner as sheet **64**. Dispensing of the sheet **96** is effected in the same manner as described above. The conversion from use with paper tissues having a length approximately half the length of the housing **16** is effected in a manner which is quick and easy, namely by merely sliding out the partition **34**.

Thus, the housing **16** will be identical regardless of whether the material being dispensed is tissue paper or paper toweling each of which have different widths. Depending upon the nature of the material to be dispensed and the location of dispenser **10**, the partition **34** may be incorporated into the housing or left out as desired. This feature eliminates the necessity for making two different housings. The manner for rotatably supporting the roll **94** may be identical with that illustrated in FIGURE 6 and the telescoping tubes supplied as an accessory.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. Dispensing apparatus comprising a housing, means within said housing for rotatably supporting a roll of tissue paper to be dispensed, a pair of rollers within said housing below said means so that the paper to be dispensed may be fed between said rollers, said housing having an opening through which the paper to be dispensed may be fed, an electric motor, means coupling said motor to one of said rollers, a selectively operable switch coupled to said motor to selectively enable said motor to drive said one roller to effect dispensing of material through said opening, said housing having a movable front wall, the other roller being rotatably supported by said front wall, a mounting flange on said housing extending away from said housing, said flange dividing said housing into a first portion which is adapted to be mounted within a wall or the like and a second portion which will be an exposed portion of the housing, said movable front wall being movably supported by the exposed portion of the housing, and said means within said housing for rotatably supporting the paper including a tubular member having its longitudinal axis substantially parallel to the longitudinal axis of said rollers.

2. Apparatus in accordance with claim **1** including means within said housing for converting the housing from supporting a roll of tissue paper to supporting a roll of material of greater width, said last-mentioned means including a partition, said partition being disposed within a central portion of said housing and supporting one end of said tubular member, said partition being removably supported within said housing and readily removable to facilitate supporting said material for unwinding about an axis substantially identical with the longitudinal axis of said tubular member, and said housing having walls on opposite sides of said partition for supporting the ends of a roll of the material.

3. Apparatus in accordance with claim **1** wherein said switch is a pushbutton switch supported by an exposed portion of said housing, and said motor driving said one roller as long as the pushbutton switch is depressed.

4. Apparatus in accordance with claim **1** wherein said motor is mounted within said housing adjacent a vertical wall within said housing, said vertical wall separating said motor and the paper to be dispensed.

5. Dispensing apparatus comprising a housing having a top and front wall, said front wall being pivotably mounted for movement about a first axis adjacent a front end of the top wall, said housing having a chamber therein for receiving a roll of paper-like material to be dispensed, a pair of rollers with said housing between which said material must pass in order to be dispensed, one of said rollers being supported by said front wall, said housing having a slot through which said material may

pass, an electric motor supported by said housing and coupled to the other roller, said housing having a wall between said motor and said chamber, means in said housing for rotatably supporting a roll of the material in said chamber about a second axis substantially parallel to the axis of said rollers, a selectively operated switch on said housing and coupled to said motor, said motor being coupled in driving relation with said other roller only so long as the switch is manually held in a closed position, and the space between said rollers lying in a vertical plane disposed between vertical planes containing said first and second axes.

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