May 21, 1968 E. J. SUMMERSBY 3,384,280

DISPENSING APPARATUS

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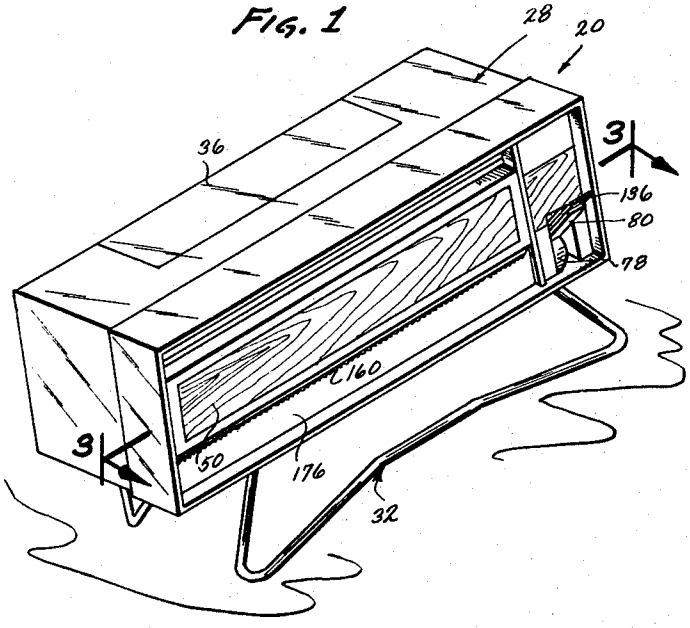
FIG. 1



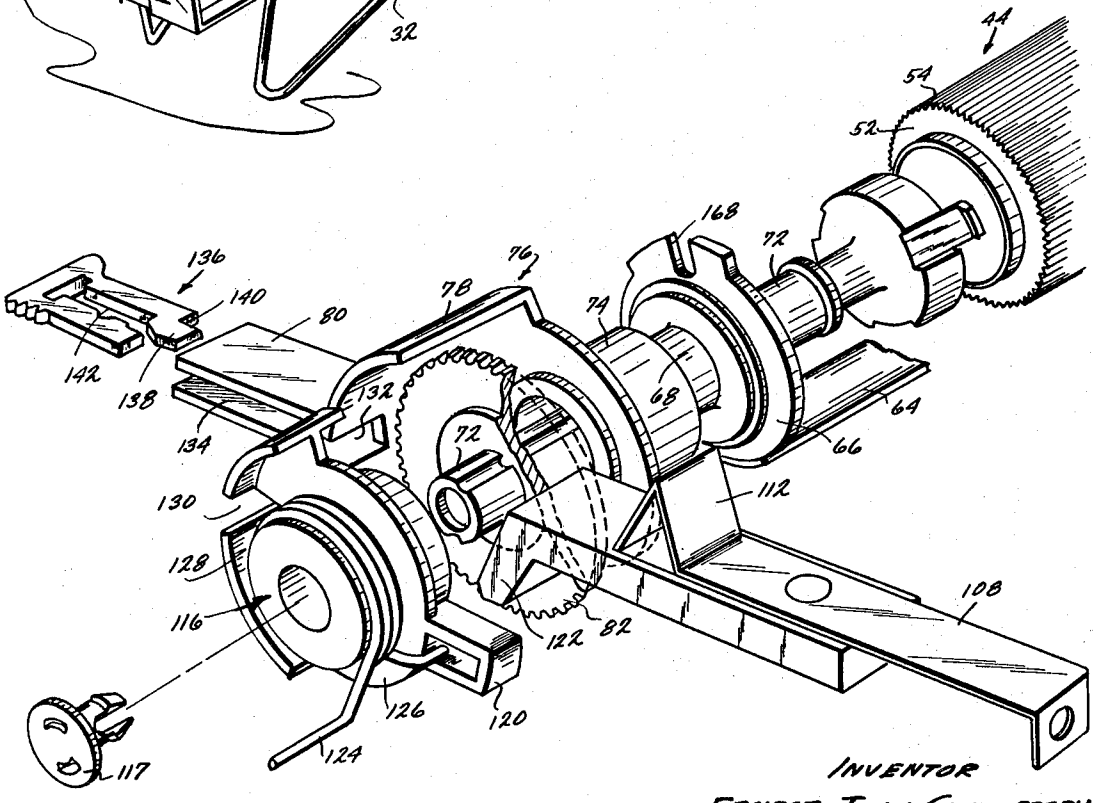


FIG. 2

INVENTOR
ERNEST JOHN SUMMERSBY

By Herzig, Walsh & Blackham
ATTORNEYS

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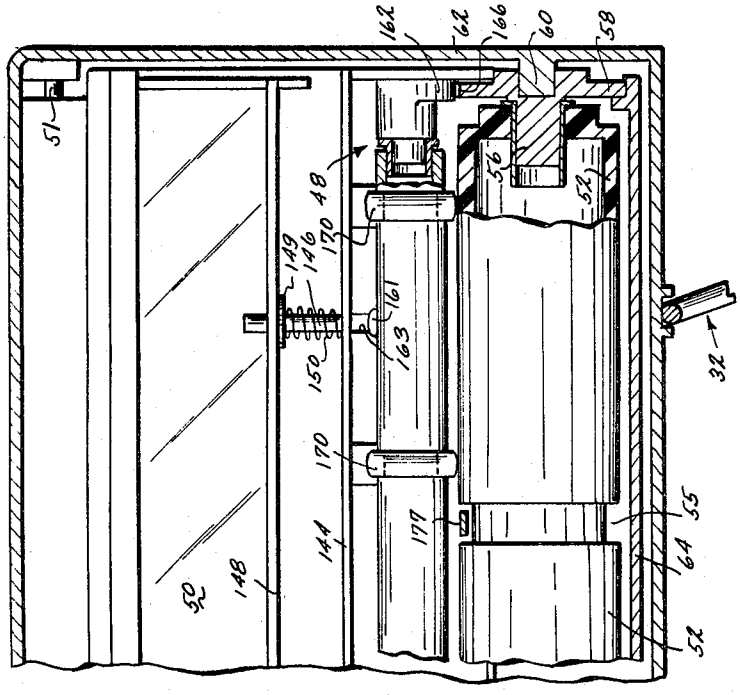

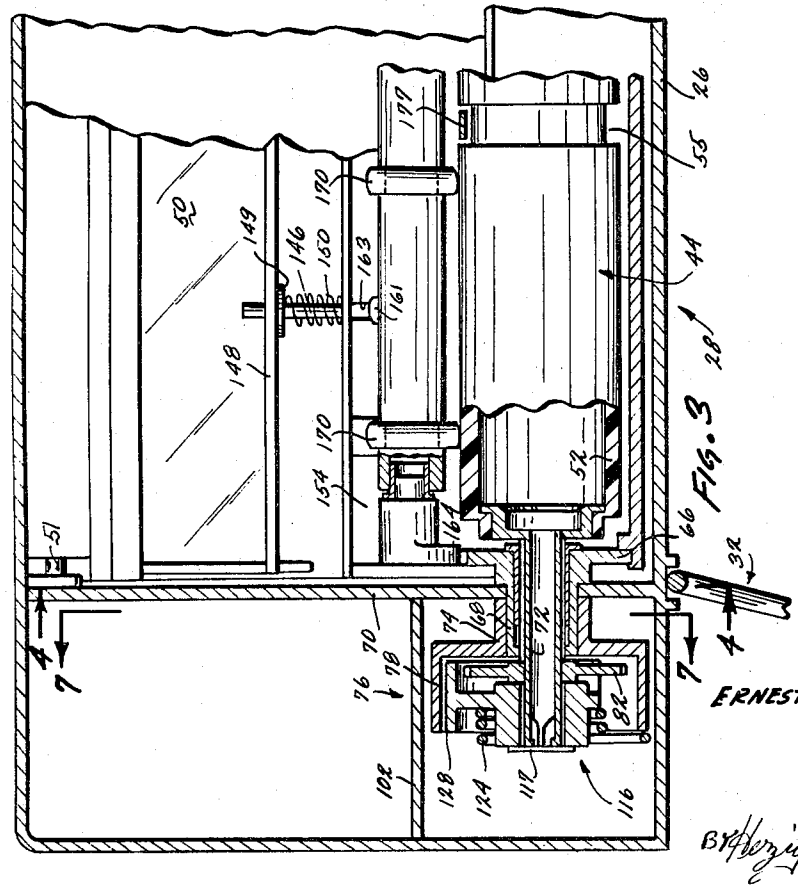

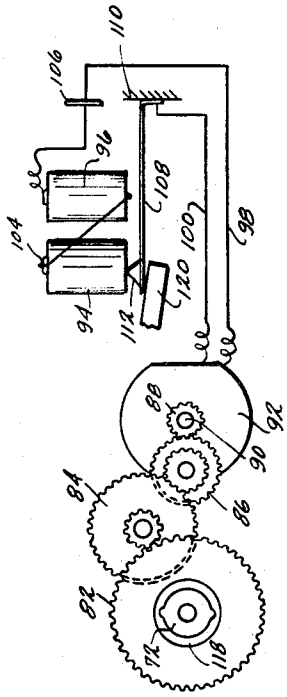

FIG. 10

FIG. 3

INVENTOR
ERNEST JOHN SUMMERSBY

BY Herzig, Walker & Blackham
ATTORNEYS

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DISPENSING APPARATUS

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FIG. 4

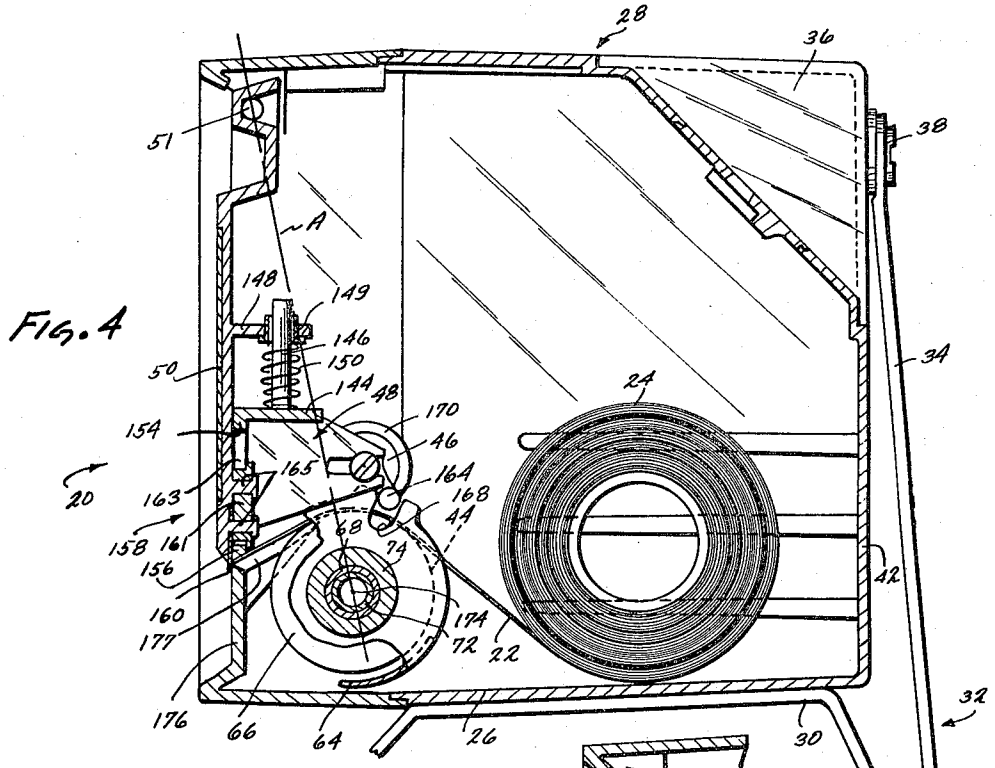


FIG. 5

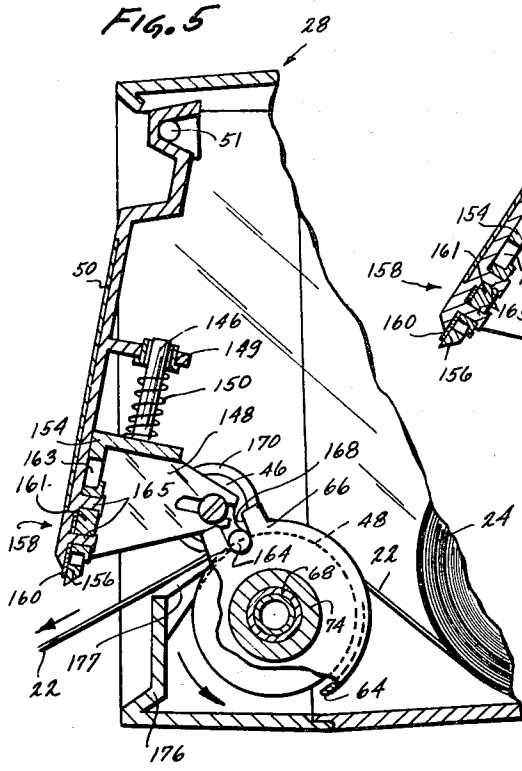
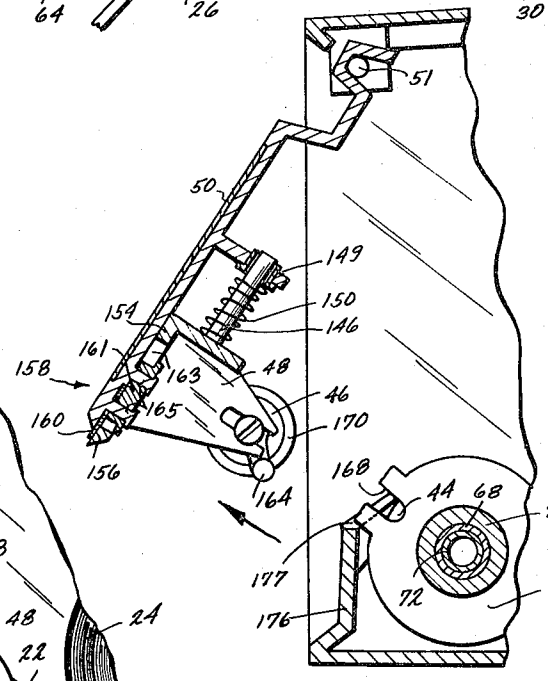


FIG. 6



INVENTOR

ERNEST JOHN SUMMERSBY

BY Herzig, Walsh & Blackham

ATTORNEYS

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FIG. 7

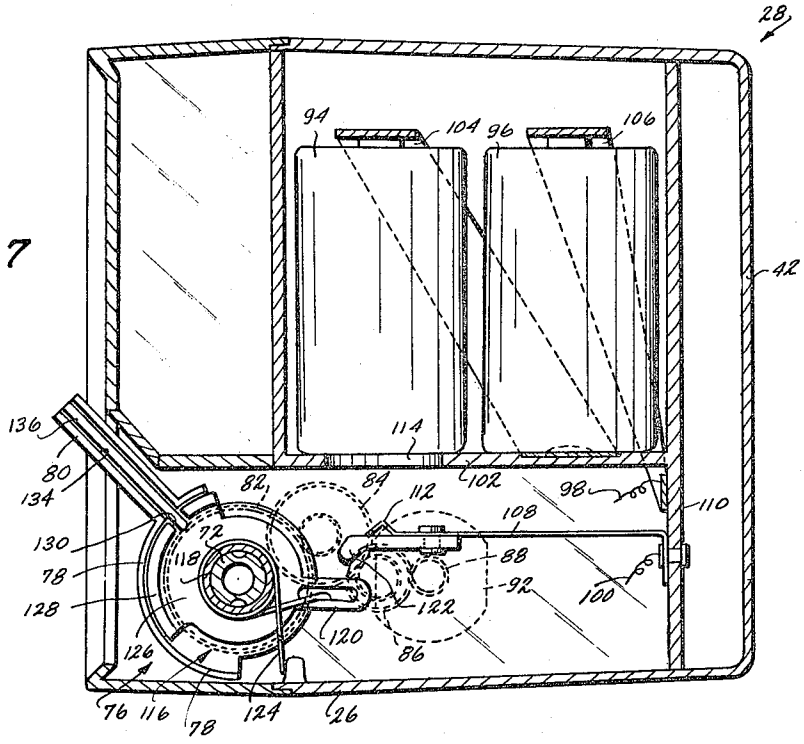
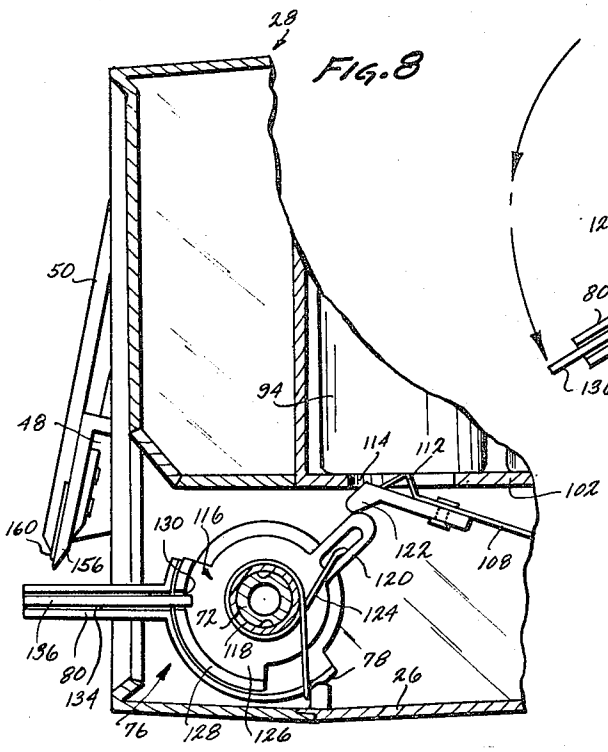


FIG. 8



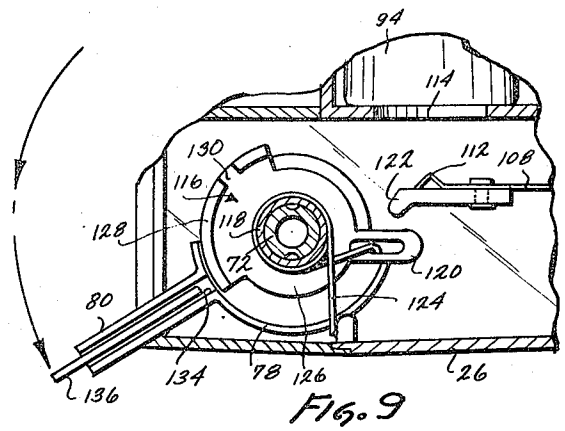


FIG. 9

INVENTOR
ERNEST JOHN SUMMERSBY

BY Herzig, Walsh & Blackham
ATTORNEYS

United States Patent Office 3,384,280 Patented May 21, 1968

3,384,280

DISPENSING APPARATUS

Ernest John Summersby, Lawndale, Calif., assignor to Mirra-Cote Company, Inc., Segundo, Calif., a corporation of California

Filed July 18, 1966, Ser. No. 565,888
10 Claims. (Cl. 225—23)

The present invention relates generally to power-operated dispensing apparatus, and more particularly to power-operated apparatus for advancing a web of material, such as plastic wrap or film, metallic foil or waxed paper, from a supply roll enclosed within the apparatus, and for automatically locking the web in position after a predetermined length thereof has been advanced from the roll, to thereby facilitate the tearing of the predetermined length of material from the roll.

It is an object of the present invention to provide a new and improved power-operated dispensing apparatus for a roll of material, such as plastic wrap or film, metallic foil or paper.

Another object is the provision of new and improved power-operated dispensing apparatus for a roll of material, which is mountable within an enclosing housing adapted to support the material roll, the housing being so constructed as to be easily mounted on a stand of any desired configuration, or mounted on or suspended from any suitable type of supporting means, such as a kitchen cabinet or the like.

A further object is to provide new and improved apparatus for dispensing a web of material from a roll, which is so constructed as to enable the easy replacement of a roll and to facilitate the initial advancement of the material web therefrom.

An additional object is the provision of new and improved power-operated apparatus for advancing a web of material from a supply roll, which is so constructed as to automatically grip the material web after a predetermined amount thereof has been advanced from the roll, to thereby facilitate the tearing of the predetermined material strip from the roll.

Still another object of this invention is to provide novel dispensing apparatus for a roll of material, which comprises a cutting blade for enabling the material to be severed from the roll after it has been advanced therefrom, and new and improved shielding means for the cutting blade, which is operable to shield the blade during advancement of the material from the roll or during replacement of a roll within the instant apparatus, and to automatically expose the blade after a desired amount of material has been advanced from the roll and locked in position, to thereby facilitate tearing of the material from the roll.

A still further object is the provision of new and improved material dispensing apparatus which is incorporated within an enclosing housing having a door movably mounted thereon, the door being movable to an open position during advancement of material from the apparatus, and to a closed position after a desired amount of material has been advanced, the material advancement and door operation being effected by a single manually operable lever that is easily grippable from the exterior of the housing.

Yet another object is the provision of new and improved dispensing apparatus for a roll of material, which is simple in construction, economical to manufacture, compact, self-mounting, reliable in operation, easy to repair and operate, and attractive in appearance.

In order to accomplish the above objects, the dispensing apparatus of the present invention comprises a cabinet for freely supporting a material supply roll and having a door pivotally mounted on the front portion thereof. A drive roll is rotatably mounted in the front portion of the cabinet and is adapted to be selectively driven by a motor that is energizable by a suitable power source, such as one or more batteries removably mounted within the cabinet, or a normal commercial power supply. An idler roll is rotatably and slidably mounted on the cabinet door and is adapted to be spring-biased into engagement with the drive roll when the door is in closed and "feed" positions. The door comprises a serrated cutter member at its lower end, and a stripper member slidably mounted thereon and operatively associated with the idler roll so as to be controlled by movement of the latter. A coupler mechanism is operatively associated with the drive roll and the cabinet door, and is provided with a lever or handle member on the outer front portion of the cabinet to provide for selective manual actuation of the power means for the drive roll and associated opening or closing of the door.

The relationship between the drive roll and the idler roll mounted on the door is such that engagement of these rolls serves to assist in maintaining the door in a closed position and to move the stripper to a position wherein it exposes the serrated edge of the cutter member. When the door is opened in response to actuation of the power means, effected by movement of the handle member, spring means serve to move both the idler roll and the stripper member downwardly to strip the cutter member and to shield its serrated edge while the door is open, thereby preventing injury to the user of the apparatus.

The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings in which like reference characters refer to like elements in the several views.

In the drawings:

FIGURE 1 is a perspective view of a dispensing apparatus constructed in accordance with the principles of the present invention;

FIGURE 2 is an enlarged, exploded perspective view of the coupler mechanism of the instant apparatus, which serves to operatively associate the power means with the drive roll and with the manually operable handle member located on the exterior of the cabinet;

FIGURE 3 is an enlarged sectional view taken substantially along line 3—3 in FIGURE 1;

FIGURE 4 is a sectional view taken substantially along line 4—4 of FIGURE 3, showing the door of the instant apparatus in a closed position wherein the leading portion of the material is locked between the idler roll and the drive roll;

FIGURE 5 is a view similar to FIGURE 4, showing the door in a partially open position during the driving of the drive roll and the advancement of the material from the supply roll;

FIGURE 6 is a view similar to FIGURE 5, showing the door as it is being moved to a fully open position for the replacement of a roll in the instant apparatus;

FIGURE 7 is a sectional view taken substantially along line 7—7 of FIGURE 3, showing the manually operable handle member in an "off" or non-dispensing position wherein the circuit for the drive roll motor is open;

FIGURE 8 is a view similar to FIGURE 7, with parts broken away, showing the handle member in an "on" or material-dispensing position wherein an electric circuit is closed between the power means and the driving motor for the drive roll;

FIGURE 9 is a view similar to FIGURE 8, with parts broken away, showing the handle member in a fully "down" or unloading position wherein the drive roll motor is not being energized and the door may be fully opened

for the replacement of a roll in the instant apparatus; and

FIGURE 10 is a fragmentary, diagrammatic view showing the circuit between the batteries, electric drive motor and switch arm of the instant apparatus, and the gearing mechanism between the electric motor and the drive roll.

As a preferred or exemplary embodiment of the present invention, FIGURES 1 and 4 illustrate a power-operated apparatus **20** for advancing a web **22** of material, such as wax paper, foil or plastic wrap, from a supply roll **24** resting on the base panel **26** of an enclosing housing **28** for the apparatus. The housing is supported in an elevated position on the base portions **30** of a supporting frame **32** having a pair of upstanding bracing portions **34** that are secured to a cover **36** for the housing in any suitable manner, such as by bolts **38** extending through apertures in the cover member **36**.

It is noted that the housing **28** may be supported in any suitable manner, other than on the stand **32**. The cover member **36** may be removably mounted on the housing **28** in a manner such that the apertures therein face upwardly rather than rearwardly, thereby enabling the housing to be secured to the undersurface of a support member, such as a wall cabinet, by screws extending through the apertures in the cover member **36**.

As further illustrated in FIGURE 4, the material supply roll **24** is enclosed within the housing **28** and freely rests on the base panel **26** thereof. The material web **22** of the roll **24** is advanced between a generally horizontally extending drive roll **44**, which is rotatably mounted on the housing **28** and selectively rotatable in a manner to be more specifically described hereinafter, and an idler roll **46** which is rotatably mounted on a frame **48** mounted for slidable movement on a door **50** that is hingedly mounted on the housing **28**. As shown in FIGURES 4, 5 and 6, the door **50** is hingedly mounted about a substantially horizontal axis **51** for vertical opening and closing movement relative to the front portion of the housing **28**. Both the housing **28** and the door **50** may be formed of any suitable material, such as a lightweight and sturdy plastic or metal.

Referring now to FIGURES 2 and 3, the drive roll **44** preferably comprises a plurality of hollow cylindrical plastic sections **52** that are rigidly secured together in any suitable manner and provided with serrated outer surfaces **54** for frictionally gripping the web **22** without damaging it. A plurality of annular channels **55** are provided in the drive roll **44** for a purpose to be described hereinafter. The section **52** adjacent a first end of the drive roll **44** is rotatably mounted on a laterally extending portion **56** on a first door cam **58** that is, in turn, rotatably mounted on a projection **60** formed integral with the adjacent side wall **62** of the housing **28**. The first door cam **58** is rigidly secured to one end of an elongated, curved separator member **64** which is connected at its other end to a second door cam **66** of substantially the same construction as the first door cam **58**. The second door cam **66** is provided with a hub portion **68** that extends laterally through an aperture in an interior panel **70** of the housing **28** and is rotatably mounted on a hollow shaft **72** that is rigidly secured to the adjacent section **52** at a second end of the drive roll **44**. From the foregoing description, it will be readily seen that the drive roll **44** is rotatable relative to the housing **28** and the door cams **58** and **66**, and that the door cams are rotatable relative to both the housing **28** and the drive roll **44**.

The hub portion **68** of the second door cam **66** extends into and is secured to the hub portion **74** of an actuator member **76** having a curved outer wall **78** and a manually grippable handle portion **80** extending outwardly therefrom through an aperture in the front portion of the housing **28** (see FIGURES 1 and 2). It will be understood, therefore, that the actuator member **76**, the door cams **58**, **66** and the separator **64** are commonly rotatable as a unit.

Disposed within the actuator member **76** and rigidly secured to the shaft **72**, is a gear member **82** which is driven through a suitable gearing arrangement **84**, **86** and **88** by the output shaft **90** of an electric motor **92**, which is of any suitable construction and mounted in any suitable manner within the housing **28** (see FIGURES 2, 7 and 10). The motor **92** is electrically connected to a suitable power source, such as a pair of batteries **94** and **96** through a pair of conductors **98** and **100**. The batteries **94** and **96** are supported on an interior horizontal housing panel **102** disposed above the motor **92**. A pair of resilient clips **104** and **106**, formed of any suitable conducting material, are adapted to engage the terminals of the batteries **94** and **96**, respectively, for the purpose of retaining the batteries in position on the panel **102** (see FIGURE 7). The resilient clip **104** connects the terminal of the battery **94** with the base of the battery **96**, while the clip **106** connects the terminal of the battery **96** with the conductor **98**.

In order to complete the circuit between the batteries **94**, **96** and the motor **92**, the conductor **100** is connected to one end of a resilient switch arm **108** that is secured to an interior member **110** mounted on the housing **28**. The switch arm **108** is provided with an upstanding contact portion **112** at its opposite end which is adapted to contact the base of the battery **94** through an aperture **114** in the housing panel **102**, when the switch arm **108** is deformed upwardly (see FIGURE 8). It will be readily seen, therefore, that when the contact portion **112** of the switch arm **108** engages the base of the battery **94**, an electric circuit is completed between the batteries **94**, **96** and the motor **92**, thereby energizing the latter and rotatably driving the shaft **72** and drive roll **44** secured thereto in a material dispensing direction, through the gearing arrangement **82** through **88**.

As shown in FIGURE 7, the resiliency of the switch arm **108** normally maintains it in a position wherein its contact portion **112** is out of engagement with the base of the battery **94**, to thus interrupt the circuit between the batteries **94**, **96** and the motor **92**. For the purpose of enabling the circuit to be selectively closed by the deformation of the switch arm **108** and engagement of its contact portion **112** with the battery **94**, a switch-operating cam member **116** is rotatably mounted on the hollow shaft **72** adjacent the gear member **82**. An end plug **117** serves to retain the cam member **116** and gear **82** on the shaft **72**. The cam member **116** comprises a hub portion **118** surrounding the shaft **72** and a rearwardly extending projection **120** which is adapted to engage a depending insulating arm **122** secured to the free end of the switch arm **108** for the purpose of deforming the latter upwardly into a circuit-closing position. A torsion spring **124** surrounds the hub **118** and has one end disposed in engagement with the housing base panel **26** and the other end in engagement with the projection **120** to normally bias the cam member **116** in a clockwise direction (as seen in FIGURE 7) out of engagement with the depending insulating portion **122** of the switch arm **108**, thereby leaving the switch arm in a circuit-opening position wherein its contact portion **112** is out of engagement with the base of the battery **94**.

The cam member **116** further comprises a radial flange portion **126** which merges outwardly with a curved exterior wall **128** that is disposed within the outer wall **78** of the actuator member **76**. As shown in FIGURES 2 and 7, the flange portion **126** and outer wall **128** are provided with a laterally extending slot **130** which is in radial alignment with a corresponding lateral slot **132** in the outer wall **78** of the actuator member **76**. The manually grippable handle portion **80** on the actuator member **76** comprises an elongated slot **134** in alignment with the slots **130**, **132** and having a key **136** slidably mounted therewithin. The key **136** is provided with an extension **138** on its inner end which is adapted to extend through the slots **130** and **132** of the cam member **116** and actuator member **76**, respectively, for the purpose of mechani-

cally connecting these members together for common rotation about the shaft **72** (see FIGURE 2). The inner movement of the key **136** in the handle slot **134** is limited by engagement of its inner surface **140** with the outer wall **78** of the actuator member **76**, and the outer movement of the key **136** in the handle slot **134** is limited by a pin (not shown) or other suitable means mounted within the handle slot and extending upwardly through an elongated center slot **142** in the key **136**.

The key **136**, therefore, serves to mechanically connect the actuator member **76** and the cam member **116** for common rotation when it is disposed in its inner position, wherein its extension **138** extends into the cam member slot **130**. When the key **136** is in its inner position, the torsion spring **124** serves to urge both the cam member **116** and the actuator member **76** in a clockwise direction (as seen in FIGURES 2 and 7), to thus normally maintain the handle portion **80** of the actuator member **76** in an upper position in engagement with the adjacent portion of the housing **28** (see FIGURE 7). When the handle member **80** is pushed downwardly, with the key **136** in its inner position, both the actuator member **76** and the cam member **116** are rotated in a counter-clockwise direction against the force of the spring **124**, with the result that the projection **120** on the cam member **116** engages the insulating portion **122** of the switch arm **108** to deform the latter upwardly and bring its contact portion **112** in engagement with the base of the battery **94**, thereby closing a circuit between the batteries **94**, **96** and the motor **92** to energize the latter and effect counter-clockwise or material-dispensing rotation of the drive roll **44** (see FIGURES 5 and 8).

When the key **136** is manually pulled outwardly to its outer position in the slot **134** of the handle portion **80**, its extension **138** is moved out of the slot **130** in the cam member **116**, to thereby enable the actuator member **76** to be rotated freely of the cam member **116**. Thereafter, the actuator member **76** may be rotated in a counter-clockwise direction (as seen in FIGURE 7) without effecting movement of the switch arm **108** to a circuit-closing position, as shown in FIGURE 9.

Referring now to FIGURES 3 through 6, the frame **48** on which the idler roll **46** is rotatably mounted, is provided with a generally laterally extending upper panel **144** having a plurality of upstanding pins **146** thereon which extend upwardly through and are slidably mounted within apertures in a rearwardly extending flange **148** rigidly secured to the inner surface of the housing door **50**. A coil spring **150** surrounds each of the pins **146** and is in engagement with the panel **144** and the lower end of a sleeve **149** surrounding the upper end of each pin **146**, to normally bias the frame **48** downwardly away from the door flange **148**.

The frame **48** further comprises a depending stripper panel **154** which is substantially perpendicular to the upper panel **144** and is in slidable engagement with the interior surface of the housing door **50**. The lower end of the stripper panel **154** serves as a combined stripper and shielding member **156** which may be of any suitable construction and is in slidable engagement with the interior surface of an elongated cutting blade **158** that is rigidly secured to the lower inner surface of the door **50** and has a serrated cutting edge **160** extending downwardly from the door **50**. The stripper panel **154** is slidably retained on the inner surface of the housing door **50** by flanged retainer members **161** that extend through vertical slots **163** in the panel **154** and are mounted on inwardly extending pins **165** having swaged inner ends. As shown in FIGURES 5 and 6, the coil springs **150** normally urge the frame **48** and stripper panel **154** mounted thereon downwardly into a position wherein the lower end **156** of the stripper panel **154** shields the cutting blade **160**, when the door **50** is in an open position relative to the front portion of the housing **28**.

The end portions of the frame **48**, on which the idler roll **46** is rotatably mounted, are provided with projections **162** and **164** that are adapted to be received in upwardly opening slots **166** and **168** in raised portions of the door cams **58** and **66**, respectively (see FIGURE 2). Rotation of the door cams **58** and **66**, therefore, results in corresponding opening and closing movement of the door **50** relative to the front portion of the housing **28**, owing to the operative association of the frame extensions **162** and **164** and the door cams. Since the door cams **58**, **66**, the separator member **64** and the actuator member **76** are secured together for common rotation relative to the shaft **72** and the drive roll **44**, rotation of the actuator member **76**, induced by manual movement of its handle portion **80**, results in rotation of the door cams and opening or closing movement of the door **50**. From the foregoing description, it will be readily understood that manual movement of the handle **80**, with the key member **136** in its inner position, will effect substantially simultaneous operation of the drive roll **44**, through circuit-closing movement of the switch arm **108**, and opening of the door **50**, owing to counter-clockwise rotation of the door cams (sse FIGURES 4, 5, 7 and 8).

As shown in FIGURES 3 and 4, the idler roll **46** has a plurality of flexible and resilient, annular pressure members **170** removably mounted thereon in substantially equally spaced relation. The annular members **170** preferably are formed of a suitable material, such as rubber or a synthetic equivalent thereof, and cooperate with the serrated exterior surfaces **54** of the drive roll sections **52** to firmly grip the material web **22** therebetween for the purpose of preventing the web from slipping. It is noted, however, that the idler roll **46** could be constructed in any other suitable manner, without departing from the spirit or scope of the instant invention.

When the door **50** is in a closed position on the housing **28**, as shown in FIGURE 4, it is noted that the longitudinal axis or axis of rotation of the idler roll **46** is disposed inwardly (or to the right as shown in FIGURE 4) of a line or axis A extending between the hinge axis **51** of the door **50** and the axis of rotation **174** of the drive roll **44**. The springs **150** exerting a downward force on the movable idler and stripper-supporting frame **48**, therefore, serve to urge the idler roll **46** rearwardly (or to the right as seen in FIGURE 4) on the drive roll **44**, thereby urging the door **50** to a closed position. With the door **50** in a closed position, the frame **48** is disposed in an upper position to compress the springs **150** and to expose the serrated edge **160** of the cutting blade **154**, which is disposed adjacent to an upstanding material web-supporting front wall section **176** of the housing **28**. The front wall section **176** is provided with a plurality of upwardly and rearwardly extending stripping fingers **177** that extend into the annular channels **55** of the drive roll **44** for the purpose of stripping material from the drive roll (see FIGURES 3 through 6).

In the operation of the instant material dispensing apparatus **20**, it will be understood that, when the handle portion **80** of the actuator member **76** is in its upper position, as shown in FIGURE 7, the door **50** is in a closed position on the housing **28**, and the idler roll **46** is urged into engagement with the drive roll **44** by the coil springs **150** to thereby maintain the door in its closed position in the manner decribed above. Since the engagement of the idler roll **46** with the drive roll **44** moves the frame **48** upwardly against the force of the springs **150**, the stripper and shielding end **156** of panel **154**, slidably mounted on the door **50**, is also moved upwardly to expose the serrated edge **160** of the cutting blade **158** mounted on the lower portion of the door **50**. The leading portion of the material web **22**, therefore, is tightly gripped between the idler roll and the drive roll, and also is engaged between the serrated cutting edge **160** and the upper portion of the front wall section **176** of the housing **28**.

When it is desired to advance the material web **22** from the roll **24**, the handle portion **80** of the actuator member **76** is manually moved downwardly (or rotated in a

counter-clockwise direction as seen in FIGURE 7), with the key **36** in its inner position wherein it connects the actuator member **76** and the switch-operating cam member **116**, to rotate the extension **120** on the cam member **116** upwardly into engagement with the depending insulating portion **122** of the switch arm **108**, thereby deforming the latter upwardly until its contact portion **112** engages the base of the battery **94** to close a circuit between the batteries **94**, **96** and the motor **92** (see FIGURES 8 and 10). The energization of the motor **92** results in rotation of the drive roll **44** in a counter-clockwise direction (as seen in FIGURE 4), through the gearing arrangement **82** through **88**, to thereby advance the leading portion of the material web **22** between the drive roll **44** and the idler roll **46**.

The downward movement of the handle portion **80** of the actuator member **76** also effects opening movement of the door **50**, preferably just prior to the energization of the motor **92** and rotation of the drive roll **44**. Since the door cams **58** and **66** are secured to the actuator member **76** for rotation therewith, counter-clockwise rotation of the latter, induced by downward movement of the handle portion **80**, results in similar counter-clockwise rotation of the door cams from the position shown in FIGURE 4 to that shown in FIGURE 5, whereby the door **50** is pivoted outwardly by the engagement of the door cams with the extensions **162** and **164** on the idler roll and stripper member-supporting frame **48** mounted on the door **50**. This opening movement of the door **50** results in a downward movement of the frame **48** by the coil springs **150** to thereby move the stripped end **156** of the panel **154** downwardly beneath the serrated cutting edge **160** of the cutting blade **158**. This downward movement of the end **156** serves to shield the cutting edge **160** while the door is open and to strip any material accumulating on the cutting blade.

The idler roll **46** is maintained in engagement with the drive roll **44**, during opening movement of the door, by the coil springs **150**, although with less force than when the door was closed, owing to a smaller amount of compression of the springs **150** when the door is open. The movement of the idler roll **46** along the drive roll **44**, just prior to advancing rotation of the latter, serves to initiate the movement of the leading portion of the material web **22** in a dispensing direction and to remove any creases or wrinkles in the web prior to dispensing rotation of the drive roll.

It will be readily seen, therefore, that with the handle member **80** in the position shown in FIGURE 8, wherein the key **136** is in its inner position, the drive roll **44** is being rotated to advance the material web **22** and the door **50** is in an open position relative to the housing **28** to enable the web to be advanced out of the front portion of the housing (see FIGURE 5). As shown in FIGURE 8, the downward movement of the handle **80**, with the key **136** in its inner position, is limited by the engagement of the cam extension **120** with the adjacent portion of the spring arm **108**, when the contact portion **112** of the latter engages the base of the battery **94**.

When a desired length of material web **22** has been advanced out of the housing **28**, the handle **80** is released and is returned to its upper position by the force of the torsion spring **124** which urges the cam member **116** and, thus, the actuator member **76** in a clockwise direction (as seen in FIGURE 7). This clockwise rotation of the actuator member **76** results in a like rotation of the door cams **58** and **66** from the position shown in FIGURE 5 to that shown in FIGURE 4, thereby moving the door **50** to a closed position in which it is maintained by the coil springs **150** in the manner described above. With the door **50** in this closed position, the material web **22** is tightly engaged between the idler roll **46** and the drive roll **44** and is also engaged by the serrated cutting edge **160** of the cutting member **158**, which has been exposed by the upward movement of the frame **48** and stripper panel **154** against the force of the springs **150** during closing movement of the door. The user may then grasp the portion of the material web extending out of the front portion of the housing and pull it upwardly against the serrated cutting edge **160** to thereby easily separate it from the material within the housing **28**.

When it is desired to replace the roll **24** in the housing **28**, the key **136** is pulled outwardly to a position wherein its extension **138** is removed from the slot **130** in the cam member **116** (see FIGURES 2 and 9), thereby enabling the actuator member **76** to be rotated independently of the cam member **116**, as hereinbefore described. The handle member **80** may then be moved downwardly from the position shown in FIGURE 7 to that shown in FIGURE 9, wherein the door cams **58** and **66** are rotated to the position shown in FIGURE 6. In this position, the slots **166** and **168** in the door cams **58** and **66**, respectively, are so disposed as to enable the extensions **162** and **164** to be removed therefrom. The door **50**, therefore, may be pivoted upwardly on its hinge axis **51** to a fully open position wherein the used material roll is easily removable from within the housing **28**.

After a new roll is placed on the base panel **26** of the housing, the leading portion of the material web is pulled over the drive roll **44** and extended outwardly of the front wall section **176** of the housing **28**. Thereafter, the door **50** is closed so that the frame extensions **162** and **164** are again disposed within the door cam slots **166** and **168**, respectively. The handle portion **80** may then be moved upwardly from the position shown in FIGURE 9 to that shown in FIGURE 7, whereby the door **50** is again moved to the closed position of FIGURE 4, owing to clockwise rotation of the actuator member **76** and the door cams **58** and **66** secured thereto. When the key **136** is again pushed into the slot **130** of the cam member **116**, the handle portion **80** may then be manually depressed to again effect advancement of the material web **22** from the new roll in the manner described above.

It will be readily appreciated from the foregoing description that the instant material dispensing apparatus **20** enables a web of material to be readily advanced from a supply roll disposed wholly within a housing, by manipulation of a single handle portion disposed on the outer portion of the housing. The construction and operation of the instant apparatus also provides for the easy replacement of a used roll by a new roll, from which material may be readily and easily advanced, without requiring a complicated or time-consuming threading procedure.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

What is claimed is:

1. Apparatus for dispensing a roll of sheet material, comprising:

a housing enclosing said roll and having a dispensing opening therein,

a door movably mounted on said housing for opening and closing said dispensing opening,

a drive roll rotatably mounted within said housing adjacent said dispensing opening,

an idler roll rotatably mounted on the inner surface of said door and adapted to engage the leading portion of said sheet material and press it into engagement with said drive roll when said door is in closed and partially open positions,

power means mounted within said housing for rotating said drive roll in a material dispensing direction,

means for moving said door on said housing, and

manually operable control means operatively associated with said power means and said door moving means,

said control means being adapted to partially open said door and to energize said power means for rotating said drive roll and advancing said sheet material when manually operated in a predetermined manner.

2. The apparatus of claim 1 wherein a frame is slidably mounted on said inner door surface for generally vertical movement toward and away from said drive roll, said idler roll is rotatably mounted on said frame, and spring means are provided for urging said frame and said idler roll downwardly toward said drive roll.

3. The apparatus of claim 2 wherein said door is pivotally mounted adjacent its upper end on said housing, and wherein said idler roll is so mounted on said frame that its axis of rotation is disposed inwardly of a straight line extending between the pivotal axis of said door and the axis of rotation of said drive roll when said door is in a closed position, thereby enabling said spring means to aid in maintaining said door in a closed position by urging said idler roll into engagement wtih said drive roll.

4. The apparatus of claim 2 wherein a material cutting member is mounted on the inner surface of the lower portion of said door and extends downwardly therefrom, and wherein the lower portion of said frame comprises a stripping and shielding member in slidable engagement with said cutting member, whereby said spring means urge said stripping and shielding member to a position extending beneath said cutting member when said door is in said partially open position, and the engagement of said idler roll and said drive roll urges said frame upwardly against the force of said spring means to move said stripping and shielding member to a position wherein said cutting member is exposed when said door is closed.

5. The apparatus of claim 1 wherein said means for moving said door comprises a cam member movably mounted on said housing and connected to said manually operable control means, said cam member having a slot therein, and said door comprising a projection disposed within said slot for movement with said cam member.

6. The apparatus of claim 1 wherein said means for moving said door comprises a pair of movable cam members disposed on each side of said drive roll and engageable with adjacent portions of said door, said cam members being connected for common movement by an elongated separator member secured thereto and disposed between said drive roll and said material roll.

7. The apparatus of claim 1 wherein said power means comprises an electric motor, an electrical energy source connected to said motor, and switch means for opening or closing a circuit between said motor and said energy source, said switch means being operable by said manually operable control means.

8. The apparatus of claim 7 wherein said electrical energy source comprises a battery removably mounted within said housing.

9. The apparatus of claim 7 wherein said manually operable control means comprises a rotatable actuator member having a manually grippable handle, a rotatable cam member adapted to engage and close said switch means, resilient means for normally urging said cam member to a position out of engagement with said switch means, and means for selectively connecting said actuator member to said cam member for rotation therewith.

10. The apparatus of claim 9 wherein said means for connecting said actuator member and said cam member comprises a movable key member, and wherein said actuator member is connected to said door moving means, whereby when said key member is moved to a position wherein said actuator member is not connected to said cam member, said actuator member is rotatable to a position enabling said door to be fully open for the replacement of a material roll within said housing.

References Cited

UNITED STATES PATENTS

3,132,782 5/1964 Coates ---------- 225—23

JAMES M. MEISTER, *Primary Examiner.*