

Nov. 18, 1969

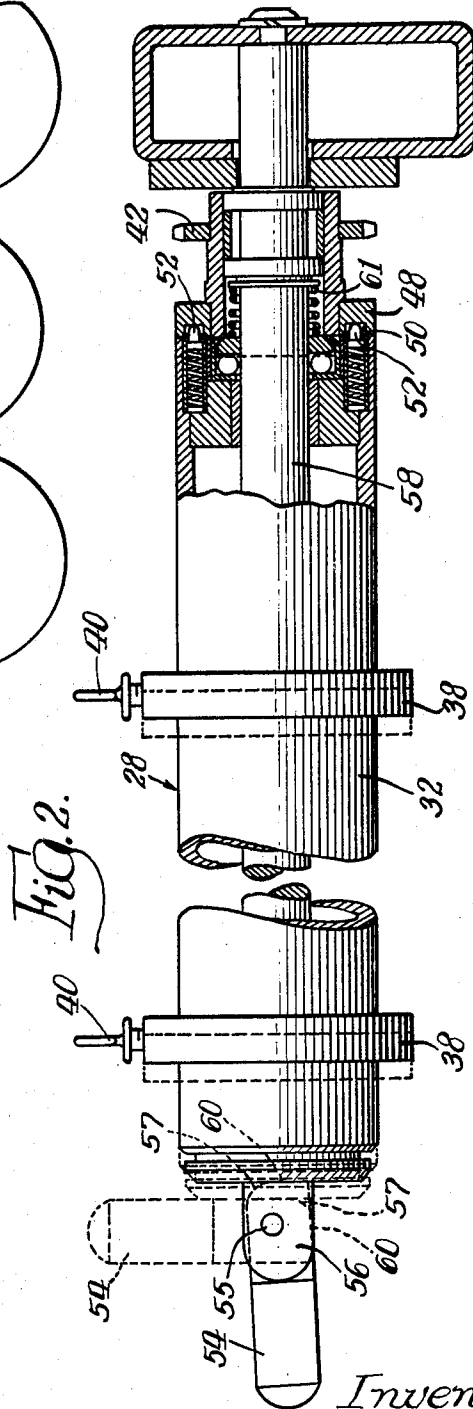
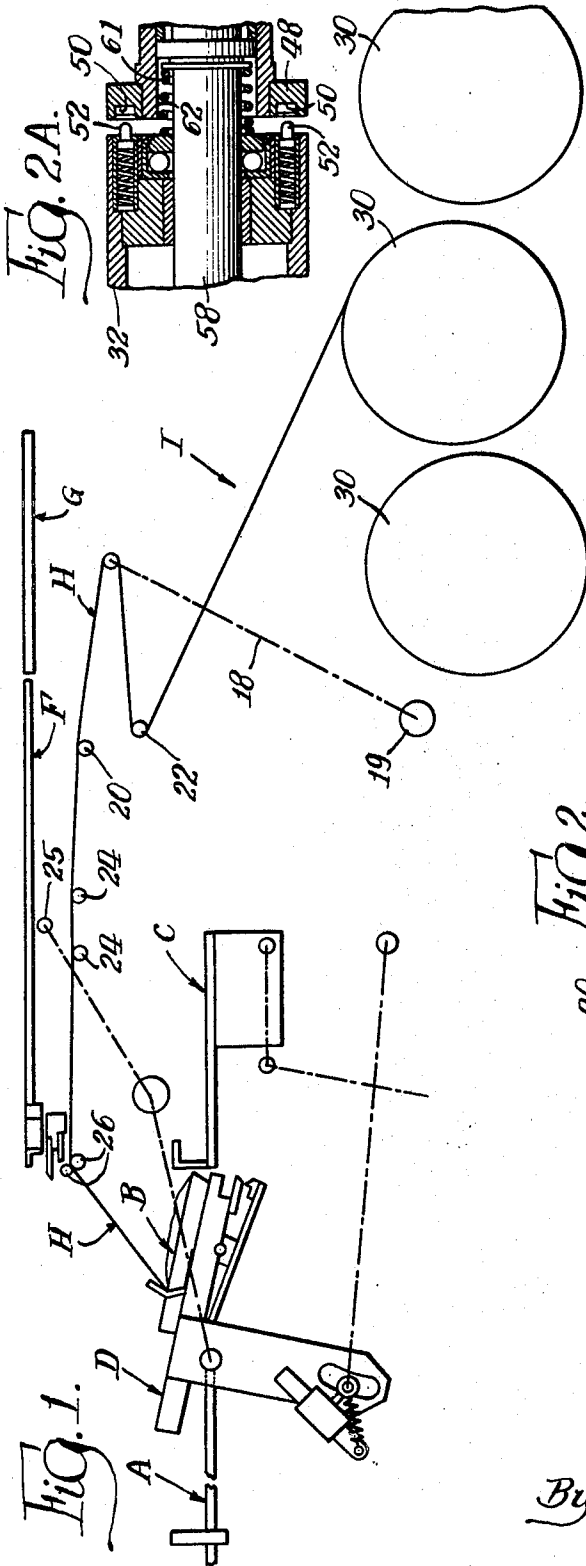
F. F. TREIBER

3,478,486

FILM FEED MECHANISM FOR PACKAGE WRAPPING MACHINES AND THE LIKE

Filed Sept. 26, 1967

6 Sheets-Sheet 1



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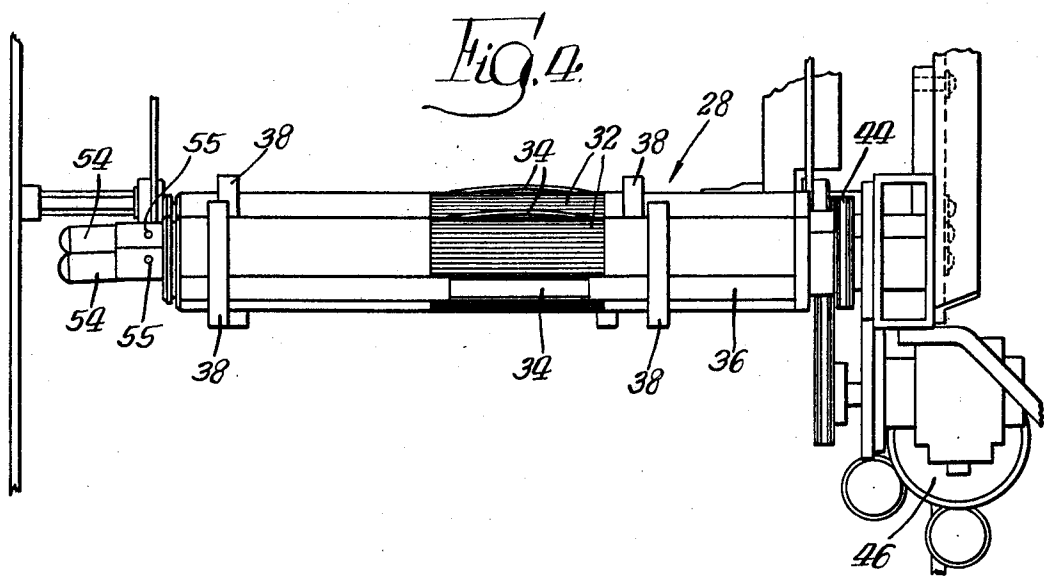
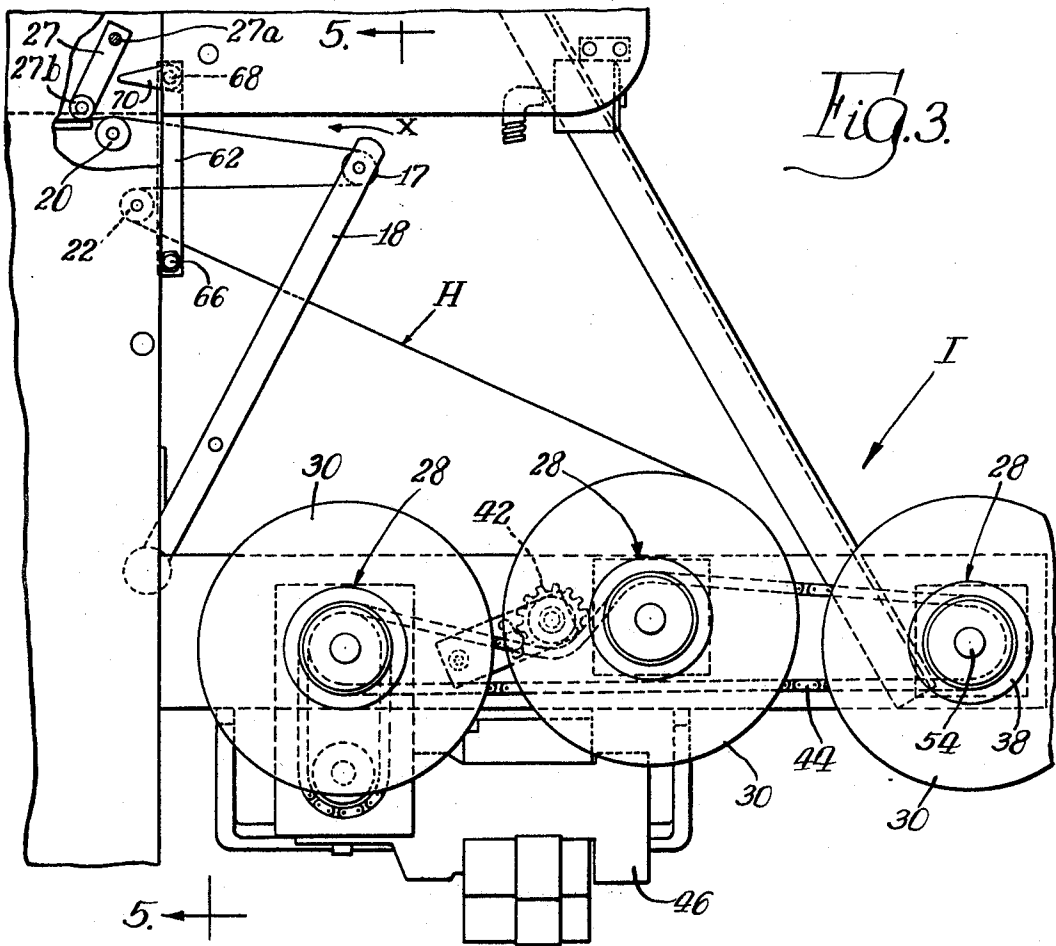
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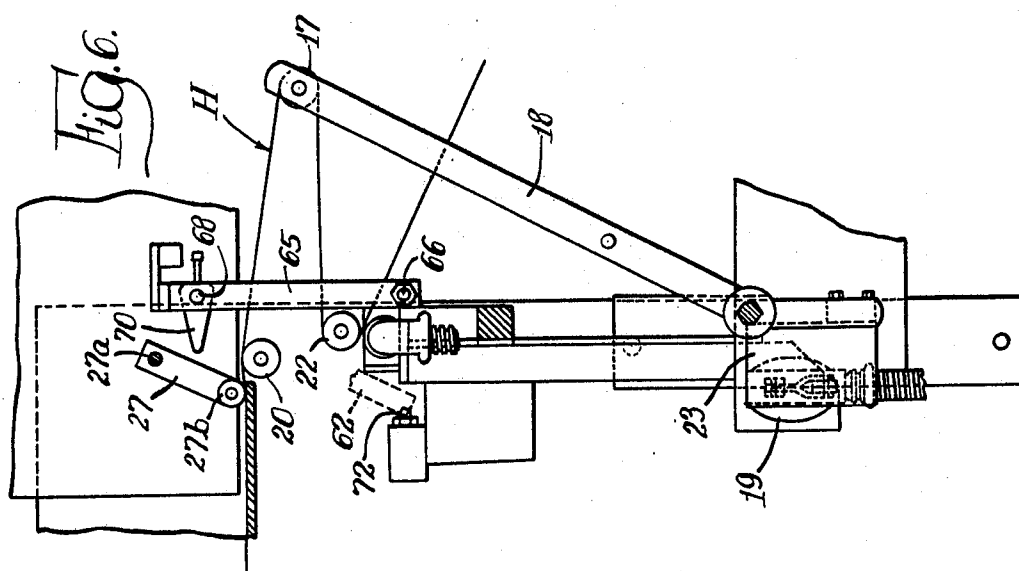
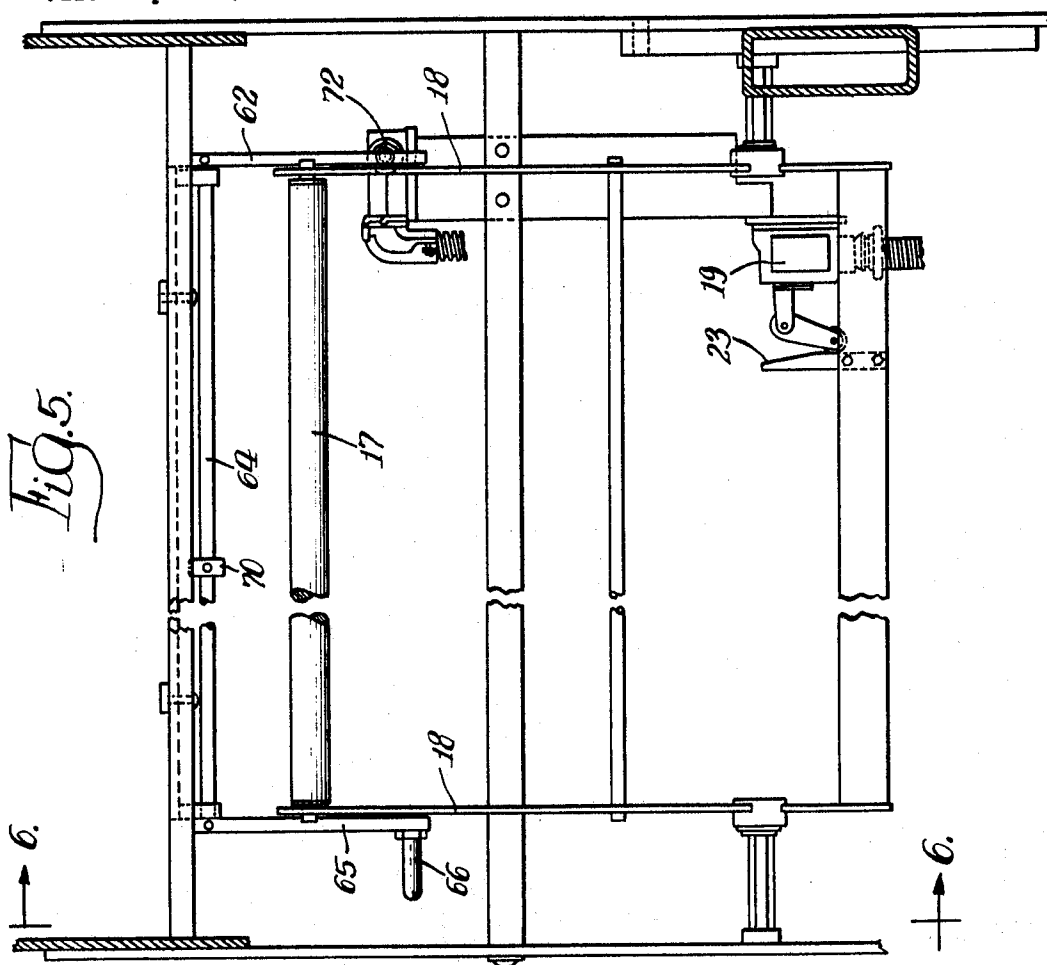
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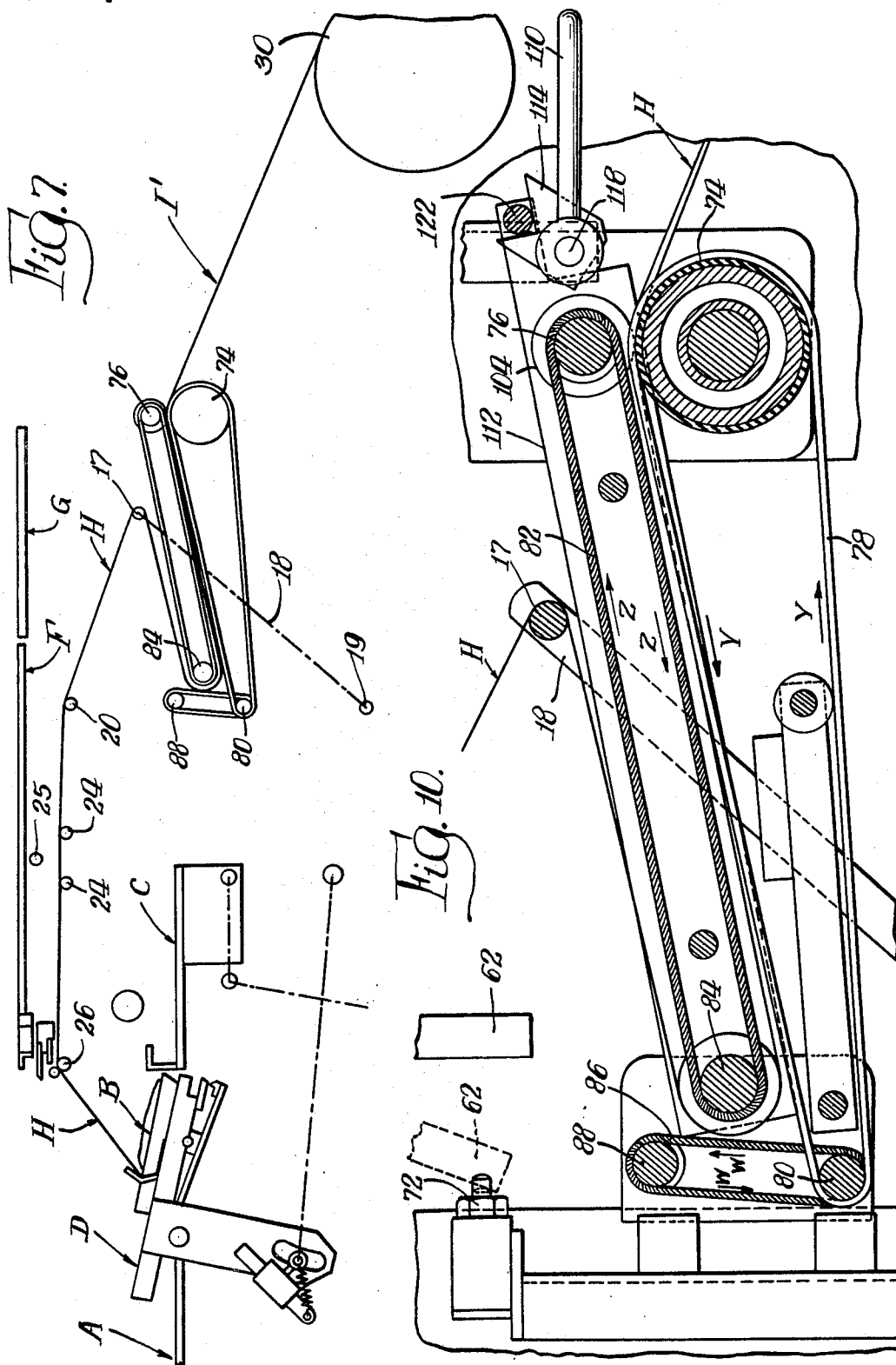
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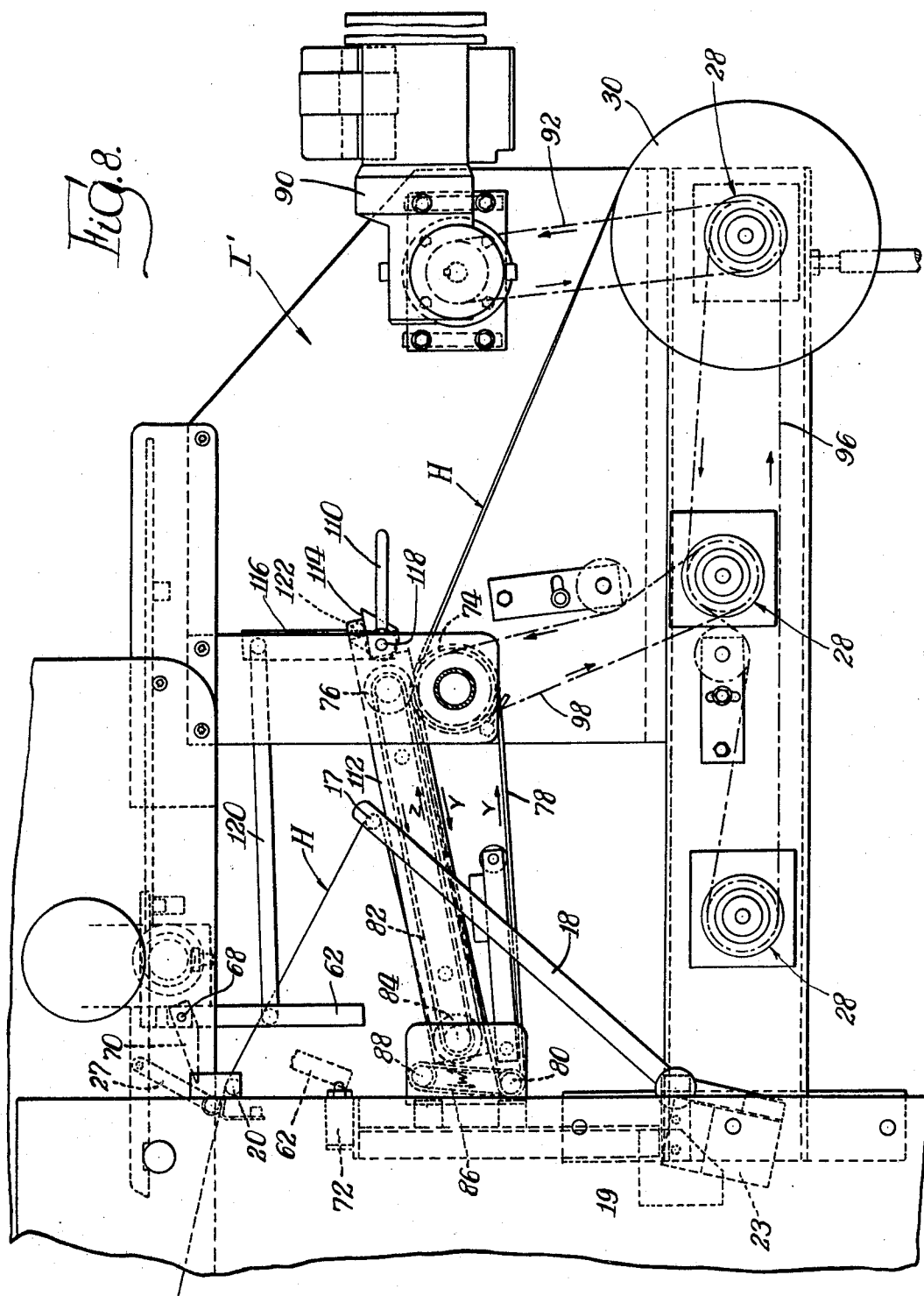
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FILM FEED MECHANISM FOR PACKAGE WRAPPING MACHINES AND THE LIKE

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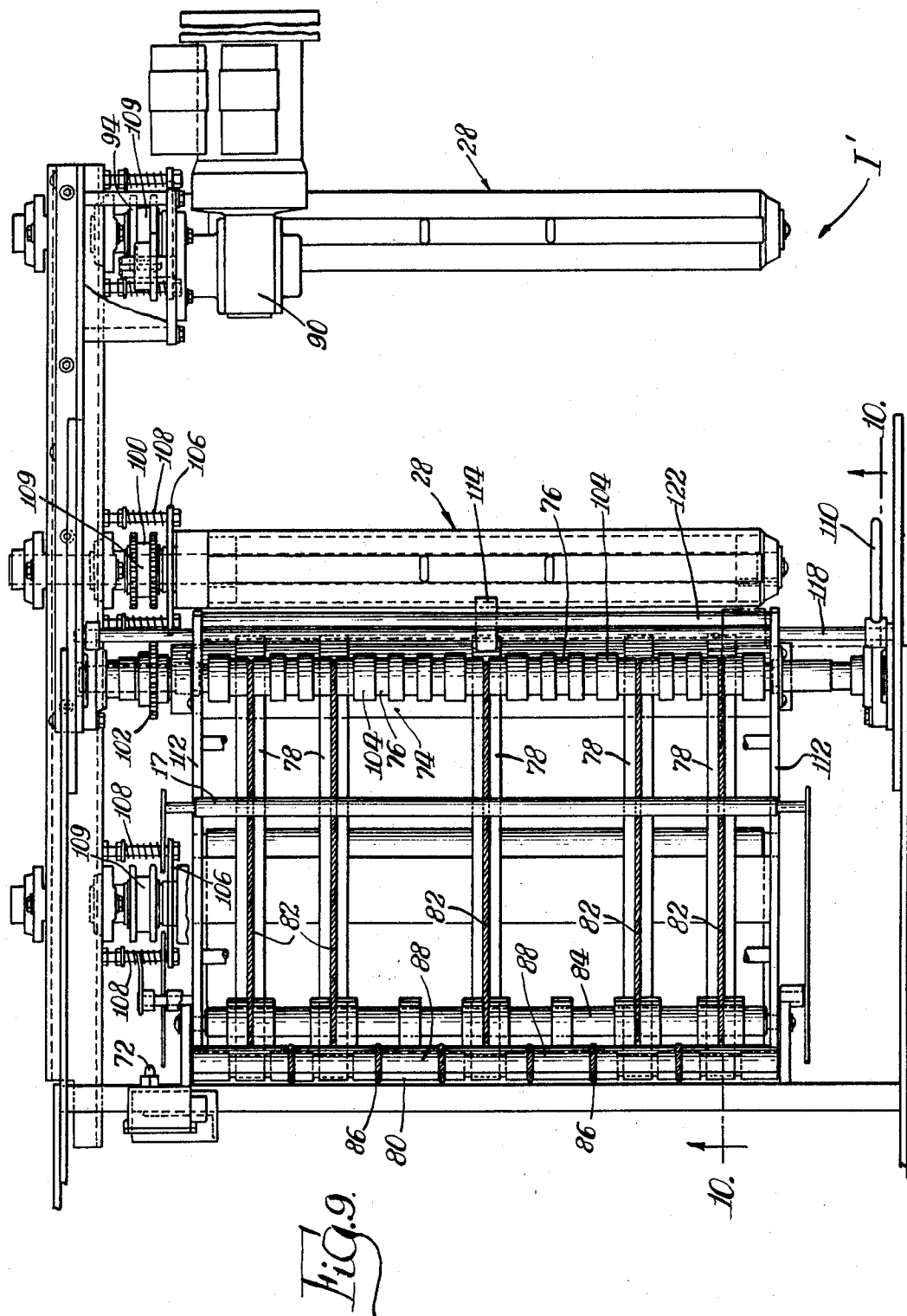
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FILM FEED MECHANISM FOR PACKAGE WRAPPING MACHINES AND THE LIKE

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**FILM FEED MECHANISM FOR PACKAGE WRAP-
PING MACHINES AND THE LIKE**
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Filed Sept. 26, 1967, Ser. No. 670,605
Int. Cl. B65b 41/16; B65h 17/02, 23/06
U.S. Cl. 53—64 **32 Claims**

ABSTRACT OF THE DISCLOSURE

A film feed mechanism for package wrapping machines and the like, in which the film is fed from a selected one of a plurality of supply rolls of film to a package wrapping station. Power means are provided for rotating the supply rolls of film and the rolls are selectively engageable with the power means. A film return check is provided to prevent return of the film from the wrapping station to the supply roll during wrapping operations. A rewind mechanism is provided for sequentially rendering the film return check ineffective and actuating the power means to rotate the supply roll of film in a rewind direction. In one form of the invention for feeding film which has little static electricity, the power means rotates one of the supply rolls in a feed direction in response to a demand for film at the wrapping station and rotates the supply roll in a rewind direction in response to actuation of the rewind mechanism. In a second form of the invention for feeding film which has much static electricity, a draw roller operated by the power means is provided to pull the film off of the supply roll in response to demand for film at the wrapping station. The power means rotates the supply roll in a rewind direction in response to actuation of the rewind mechanism which sequentially renders the film return check ineffective, renders the film pull means ineffective and then reverses the power means. A conveying means strips the film from the draw roller and directs it for proper threading into the wrapping machine and a drag brake is provided on the supply rolls to prevent the supply roll from overrunning the film pulled off of the supply roll.

SUMMARY OF THE INVENTION

A principal object of this invention is to provide a new and improved film feed mechanism for package wrapping machines and the like.

Another object of this invention is to provide a film feed mechanism which has a plurality of supply rolls of film for feeding film from a selected one of the rolls to the package wrapping machine to facilitate reloading the wrapping machine with films to replenish the same or changing the size, weight or type of film utilized in the machine.

A further object of this invention is to provide a film feed mechanism of the character described in which power means are provided for rotating the selected supply roll in a feed direction in response to demand for film at the wrapping section while the remaining supply rolls are maintained inactive, the power means being reversible for rotating the selected supply roll in a rewind direction.

Yet another object of this invention is to provide a film feed mechanism as set forth in the preceding paragraph which includes a film return check for preventing return of the film from the package wrapping station to the supply roll and a rewind mechanism for sequentially rendering the film return check ineffective and actuating the power means to rotate the selected supply roll in a rewind direction.

Still a further object of this invention is to provide a film feed mechanism of the character described including a film pull means operated by a power means to pull film off of the selected supply roll while the selected supply roll is free to rotate in a feed direction, the remaining supply rolls being maintained inactive and the power means being reversible for rotating the selected supply roll in a rewind direction.

Another object of this invention is to provide a film rewind mechanism as set forth in the preceding paragraph which includes a film return check for preventing return of the film from the package wrapping station to the supply roll and a rewind mechanism for sequentially rendering the film return check ineffective, rendering the film pull means ineffective, and reversing the power means.

A further object of this invention is to provide a film feed mechanism as set forth in the preceding paragraph wherein the film pull means includes a draw roller for pulling the film from the selected supply roll and conveying means which strips the film from the draw roller and directs it for proper threading into the wrapping machine.

Further objects and advantages will become apparent from the following detailed description taken in connection with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic view of an automatic package wrapping machine embodying one form of a multi-spindle film feed mechanism embodying the invention;

FIG. 2 is a fragmentary elevational view, partially in section, of one of the film feed spindles, with the spindle engaged with its respective drive collar;

FIG. 2A is a view of the right-hand end of FIG. 2, with the spindle out of engagement with the drive collar;

FIG. 3 is a side elevational view of the multi-spindle film feed mechanism of FIG. 1;

FIG. 4 is an end elevational view of the film feed mechanism looking to the left in FIG. 3;

FIG. 5 is a vertical section through the film feed mechanism and taken generally along the line 5—5 of FIG. 3;

FIG. 6 is a vertical section through the film feed mechanism and taken generally along the line 6—6 of FIG. 5;

FIG. 7 is a view similar to that of FIG. 1 of an automatic package wrapping machine embodying a second form of the multi-spindle film feed mechanism;

FIG. 8 is a side elevational view of the film feed mechanism of FIG. 7;

FIG. 9 is a top plan view of the film feed mechanism shown in FIG. 8; and

FIG. 10 is a fragmentary vertical section taken generally along the line 10—10 in FIG. 9.

DETAILED DESCRIPTION OF THE INVENTION

The multi-spindle film feed mechanisms of this invention are illustrated as embodied in an automatic package wrapping machine shown generally in FIGS. 1 and 7. The mechanism of FIGS. 1 through 6 is designed to feed and rewind film which does not have much static electricity and does not cling to itself. The mechanism shown in FIGS. 7 through 10 is designed to feed and rewind film which has much cling and static electricity, or what is sometimes called "sticky" film. The latter film requires an extra effort to pull it off its roll. Both film feed mechanisms as shown in FIGS. 1 and 7 are adapted for a similar automatic package wrapping machine and like numerals will be applied to like structural elements in both figures. The wrapping machine shown in these figures is similar to the structure shown in my copending

application, Serial No. 504,350, now Patent No. 3,428,098 issued February 25, 1969, and the detailed description of machine disclosed therein is incorporated herein by reference. A general description with reference to FIGS. 1 and 7 is given prior to a detailed description of the structure of the film feed mechanisms.

In general, the wrapping machine includes an in-feed conveyor, indicated generally at A, at one end of the machine for receiving a package of meat or the like having a tray or board on which the product is placed, as indicated generally at B, with the in-feed conveyor advancing the product onto a transfer platform, indicated generally at C, which can move between a retracted position shown in FIGS. 1 and 7 and an advanced position adjacent the in-feed conveyor A when it is to receive a package. After the package is received on the platform C, the platform returns to the position shown in FIG. 1 for transfer of the package to an elevator, indicated generally at D, with the initial wrapping occurring as the package is advanced onto the elevator and further being accomplished as the elevator is elevated from a lower position shown in FIGS. 1 and 7 to an elevated position where banding the wrapping film about the package is completed as the package is moved substantially off the elevator. The package is advanced through a wrapping station, indicated generally at F, where the ends of the wrapping material are folded progressively under the package. The film layers at the underside of the package are then heat-sealed on a hot plate, indicated generally at G, and the package is then discharged from the machine at an exit opposite from the entry end.

During the lowering movement of the elevator, film H is drawn downwardly by gripping mechanism on the elevator so that the film extends vertically across the path of a package which is pushed off the transfer platform C onto the elevator, as shown in FIGS. 1 and 7. This action of pushing the package into the film results in release of the film from the gripper structure on the elevator to have the leading edge of the film underneath the package as shown in these figures and with the adjacent film extending over the package. In other words, since the film is pulled as a result of the pushing of the package into the film, the device is self-determinative as to how much film is needed and this carries back to the film supply means. The elevator D then ascends to its upper horizontal position to substantially complete the wrapping of the film about the package and as the package is pushed off the elevator D the wrapping is completed and a hot plate seals the overlapping film as the underside of the package, forming an initial pack seal with opposite ends of the film extending from the package. The film about the package is cut off from the supply length thereof by cutting mechanism in part carried by the elevator and simultaneously the leading edge of the film supply is inserted within the gripping structure on the underside of the elevator and held thereby. Details of structure and operation of the wrapping machine can be seen with reference to the above-mentioned application.

The film is supplied to the wrapping machine from a film feed mechanism, generally designated I in FIG. 1 and I' in FIG. 7. The film feed mechanisms are partially controlled by a clutch mechanism which in turn is under the control of an idler or dancing roller 17 mounted on a pair of pivotal arms 18 and positioned within a loop of the film H. The clutch is controlled by a limit switch 19 at the lower end of one of the arms 18 whereby the normally closed limit switch is held open when the loop of film, defined by a pair of rollers 20 and 22', is relatively large and is permitted to close when the loop shortens. The operation of limit switch 19 is controlled by an actuator plate 23 (FIG. 6) carried on the lower end of one of the dancing roller supporting arms 18. When the loop shortens as a result of pushing a package into the film, the limit switch 19 has closed and the film feed mechanism I or I' adds additional film to the loop

in which the dancing roller 17 engages. The film travels from roller 20 over a pair of rollers 24 (FIGS. 1 and 7) spaced from each other to provide a gap therebetween in which an intermediate film loop can be formed and in which a back feed roller 25 rests to exert tension on the film. The film then passes between rollers 26 and the film partially wraps about one or the other of these during the wrapping operation.

Since the dancing roller 17 and its arm 18 are constantly urged to the right as viewed in the drawings, there will be a constant pull on the film H in the direction of the dancing roller away from the packaging machine. Therefore, a film return check 27 (FIGS. 3 and 6) is pivoted at point 27a and is provided with a rubber-faced stop or friction member 27b which prevents return of the film in the direction of the dancing roller 17 should there be tension on the film to the left of the return check as viewed in the drawings. The return check must be lifted before film can be rewound by the film feed mechanisms I, I'.

Turning now to the form of the invention shown in FIGS. 1 through 6, a multi-spindle film feed mechanism I is designed to feed "non-sticky" film to the automatic package wrapping machine. The illustrated embodiment includes three film roll spindles, indicated generally as 28, for receiving rolls of film 30 (FIGS. 1 and 3). However, there could be any convenient number of spindles depending upon the desired versatility of the machine. The spindles are slightly less in diameter than the core of the film roll and have a knurled section 32 to add traction for driving the film rolls. A plurality of arched flat springs 34 (FIG. 4) are disposed longitudinally on the spindle in alignment with axially extending flat surfaces 36 to give added friction and traction without the necessity of a press fit between the spindle and the film roll core. The film roll is positioned longitudinally on the spindle by a pair of collars 38 which are locked to the spindles by thumb screws 40 (FIG. 2). To slide a film roll onto the spindle it is necessary to remove the left-hand collar as viewed in FIG. 2. After the film roll has been placed on the spindle and positioned with the center of the machine, the collars are placed against the end of the film roll and locked in place by means of the thumb screws.

The spindles are rotated through means of a sprocket 42 (FIG. 2) and a drive chain 44 (FIG. 3) which is driven by a motor 46. As the dancing roller 17 is pulled by the film H as a package is fed into the film as described above, the dancing roller swings in the direction of arrow X (FIG. 3) and causes the actuator plate 23 at the lower end of the dancing roller arm 18 to actuate limit switch 19. This starts motor 46 for rotating a selected spindle and film roll in a feed direction, counterclockwise as viewed in FIG. 3, causing the film to unwind and feed the loop surrounding the dancing roller 17. When there is no more demand for film during a particular packaging operation, the actuator plate 23, through limit switch 19, will cause the motor to stop and thereby stop the rotation of the film roll whereupon it will remain stationary until there is a demand for more film as sensed by the dancing roller. The positive drive on the film roll is important so that when there is no more demand for film, the film roll will not continue to rotate under its own momentum and cause the film H to freely unwind from the roll.

Referring to FIGS. 2 and 2A, means are provided for selectively moving a desired spindle into and out of operative engagement with its respective sprockets 42 driven by motor 46. The sprockets 42 are each fixed to a drive collar 48 which has a plurality of holes or recesses 50 angularly spaced about its inner face and facing the right-hand end of spindle 28 as viewed in FIG. 2. A plurality of spring loaded plungers 52 are embedded within the right end of each spindle 28 opposite the recesses 50 of its respective drive collar 48 so that whenever the plungers extend into holes 50 the spindle will be rotated through means of the sprocket 42 and the chain 44 from motor 46.

A spindle lock handle 54 is pivotally mounted at point 55 on a lug 56 extending axially away from a shaft 58 (FIG. 2) about which the spindles are freely rotatable. The spindle lock handle has a cam surface 57 for engaging the left end of shaft 58 when the handle is swung from a vertical position shown in phantom in FIG. 2 to a horizontal position shown in full lines. When the spindle lock handle is pivoted to its horizontal position, the respective spindle 28 is forced to the right as viewed in FIG. 2 causing its spring loaded plungers 52 to seat in the holes or recesses 50 in the respective drive collar 48 and thereby be selectively driven by motor 46. The spindle lock handle has a flat land 60 on its inner end which allows the axis of the lever to slightly bypass its pivot point 55 in relation to the axis of shaft 58 so it will remain in its locked operative position.

When the spindle lock handle is raised to its vertical position, a spring 61 embedded within a recess in drive collar 48 forces the spindle to the left to a position shown in FIG. 2A moving the spring loaded plungers 52 out of recesses 50 and thereby disengaging the spindle from its respective drive collar whereby the spindle is not rotated when the dancing roller 17 actuates motor 46. This structure permits an operator to select any desired roll for feed to the wrapping machine in response to dancing roller 17. This is important since it is desirable to have available different sizes, weights or types of film. It eliminates the necessity of completely removing any particular film roll from the spindles should it be necessary to change the type of film. In addition, when one roll of film is exhausted, a second spindle may quickly be engaged and the machine threaded without the necessity of replacing the exhausted film roll core before a new roll of film can be threaded into the machine.

Referring to FIGS. 3 through 6, means are provided for rewinding the film onto its roll. A reversing lever 62 is secured to a crossbar 64 which extends across the film feed mechanism to a handle arm 65 and an actuating handle 66. When it is necessary to change film, the operator swings handle 66 to cause the reversing lever to pivot clockwise about point 68 (FIGS. 3 and 6). This first causes a bell crank type check arm lifter 70 secured to lever 62 to engage the film return check arm 27 and raise the check arm to bring the rubber-faced stop 27b out of engagement with the film. This permits the film to be moved back toward the film roll. As the operator continues to move the reversing lever 62 clockwise to a position shown partially in phantom in FIG. 6, the reversing lever engages a limit switch 72 which causes motor 46 to operate in a reverse or rewind direction from the normal feeding direction and rewinds the film from the package machine onto the film roll.

Thus it can be seen that the embodiment shown in FIGS. 1 through 6 permits the utilization of multiple spindles for storing film rolls of different sizes, weights, or types with only one roll engaged for driving. Selection is made to drive the desired roll by simply actuating the spindle lock handle 54. Rolls that are not being used can be disengaged by the handle and maintained in an inoperative condition. In addition, a simple positive rewind mechanism is provided for releasing the film return check and also reversing the power drive by rotating a single member, handle arm 65, with handle 66, in a clockwise direction.

Turning to FIGS. 7 through 10, a second form of the film feed mechanism is indicated generally as I', and is designed to unwind and rewind "sticky" films which have much cling and static electricity. In this form of the invention the film roll rotates with limited freedom in a feed direction (counterclockwise in FIGS. 7, 8 and 10) as the film is pulled off of the film roll. The roll rotates, without power, as fast as the film is pulled off. As with the first form of the invention, three film rolls 30 are provided and are slid in place on the film roll spindles 28.

The film rolls are located and held on the spindle in the same manner as described above.

In order to provide means to pull the "sticky" film off of the film roll, and referring particularly to FIGS. 8, 9 and 10, a rubber-faced draw roller 74 and a metal-faced pressure roller 76 are provided between which the film H is threaded from the selected film roll 30. Referring to FIG. 9, a plurality of thin, endless composition belts 78 are spaced longitudinally along draw roller 74 and extend substantially horizontally therefrom. The belts pass around an elongated pulley or roller 80 to form a moving bed to strip the film from draw roller 74 and carry the film away from the draw roller and pressure roller 76 and thereby prevent bunching of the film. A plurality of endless, steel spring belts 82, as best illustrated in FIG. 9, are positioned about pressure roller 76 and extend away from the pressure roller adjacent the composition belts 78 and pass around an elongated pulley or roller 84. The steel spring belts 82, in combination with composition belts 78, strip the film from the draw roller 74 and lead it to a set of vertical steel spring belts 86 which are looped about pulley 80 and a third pulley or roller 88. As the steel spring belts 86 move in the direction of arrow W, the film is threaded back over the top of the first set of steel spring belts 82 where the film is guided toward the dancing roller 17 whereupon the operator can thread the film around the dancing roller, onto stationary roller 20 (FIG. 8), beneath the film return check 27, and onto the wrapping machine as described above. Spring belts 86 are positioned under dancing roller 17 such that the dancing roller moves in a path overlying the upper run of the belts.

In operation of the form of the invention shown in FIGS. 7-10, the package will be pushed into the film as set forth above, causing the film to pull the dancing roller 17 and causes the actuator plate 23 to actuate limit switch 19 which closes the circuit to a drive motor 90 (FIGS. 8 and 9). Motor 90 drives a first drive chain 92 which is threaded about a double sprocket 94 (FIG. 9) at the first film roll spindle 28 to the right in FIG. 8. A second drive chain 96 is threaded around the sprockets on all three film roll spindles 28 as shown in FIG. 8. A third drive chain 98 is threaded around double socket 100 on the middle film roll spindle and upwardly about a sprocket 102 (FIG. 9) on one end of the rubber-faced draw roller causing it to rotate counterclockwise to drive the composition belts 78 in the direction of arrows Y (FIGS. 7 and 8). The movement of the composition belts 78 cause rotation of pulley roller 80 which in turn moves the vertical set of steel spring belts 86 in the direction of arrows W (FIGS. 7 and 8). In order to rotate the metal-faced pressure roller 76 and steel spring belts 82, a plurality of integral ring-shaped portions 104 protrude outwardly from the pressure roller and ride on the upper surface of the film H as it passes over the draw roller 74.

Still referring to the form shown in FIGS. 7 through 10, for purposes of rewinding the film onto the film roll spindles 28 (in a manner to be described in more detail hereinafter), a conventional roller or ball type one-way clutch 109 is placed between the double sprockets and the spindle shafts. As drive is imparted to the sprockets in the feed direction and they rotate counterclockwise as viewed in FIG. 8, the spindle shafts are free to rotate relative to the sprockets. However, when winding the film back onto the film roll 30, the motor will have been reversed to run the drive chains 92, 96, and 98 in a clockwise direction as viewed in FIG. 8. This will cause the double sprockets and the one-way clutches of the film roll spindles 28 to engage and thereby rewind the film onto its respective roll 30.

The means for reversing the film roll rotation for rewinding includes an actuating member in the form of a lifter lever 110 (FIGS. 8 and 9) fixedly positioned on the frame of the machine in relation to the draw roller 74. The pressure roller 76 is mounted in a frame 112

which is pivoted on roller 84. Lifter lever 110 has a cam portion 114 and a bell crank portion 116 fixedly secured thereto, all of which are pivoted at point 118 to the frame of the machine. As seen in FIG. 8, the upper end of bell crank portion 116 is connected by means of a link 120 to the reversing lever 62 described in connection with the first form of the invention. The cam portion of lifter lever 110 engages a pin 122 which is fixed to the end of the pressure roller frame 112 opposite its pivot, pulley roller 84.

In operation, raising of the lifter lever 110 swings the lifter cam 114 upward to engage the pressure roller lifter pin 122 on the pressure roller frame 112, pivoting the pressure roller frame upward about pulley roller 84 and lifting the pressure roller off of the film and the rubber-faced draw roller 74. Continued lifting of the lifter lever 110 causes link 120 to pivot reversing lever 62 about point 68 and causes check arm lifter 70 to lift the film return check 27 in an upward direction moving the rubber-faced stop 27b out of contact with the film. This permits the film to move backward out of the wrapping machine for rewinding onto its respective film roll 30. Further lifting of the lever 110 will move reversing lever 62 to a position shown in phantom in 68 where it makes contact with reversing limit switch 72 which reverses motor 90 to rotate the respective film roll spindle in a clockwise direction for rewinding the film onto its respective roll.

The draw roller has a conventional one-way clutch connecting it with its drive shaft so that at the time of threading the film through the draw roller 74 and the pressure roller 76, the rubber-faced draw roller can be rotated in a counterclockwise direction by hand thereby overrunning the drive shaft because of the one-way clutch. When power is put to the drive shaft from chain 98 for feeding the film, the one-way clutch will rotate the draw roller in a counterclockwise direction. The operator then swings the dancing roller in a counterclockwise direction as viewed in FIGS. 7 and 8 to actuate the film feed limit switch 19 and the film will automatically be pulled through the draw rollers 74 and pressure roller 76 stripping the film off of its respective roll 30. When the film is drawn around the end of spring belts 82 and over the top of the belts, the operator will release the dancing roller and it will swing in a clockwise direction to disengage the film feed limit switch 19 and the draw roller will stop. The operator can then place the film around the dancing roller 17 from the underside, over the top and then over the stationary roller 20 at the machine bed and under the film return check.

It can be seen that the construction of the draw roller, pressure roller, composition belts and spring belts not only strip the film from its respective roll but a means is provided for guiding the film to the dancing roller in a path underlying the path of movement of the dancing roller while preventing the film from bunching up after it passes between the draw roller and the pressure roller. Here again, multiple spindles are permitted and a positive rewind is provided for releasing the film return check and the pressure roller and also reversing the power drive by lifting a single lever 110.

A drag brake for each spindle comprises a friction plate 106 (FIG. 9) which is urged by springs 108 against the adjacent end of the spindle so that it will not overrun the amount of film being pulled off the roll 30 by draw roller 74.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom as some modifications will be obvious to those skilled in the art. I claim:

1. In combination with a package wrapping machine having a package wrapping station, a frame, means on the frame rotatably mounting a plurality of supply rolls of film for feeding from a selected one of the rolls to said package wrapping station, means on the frame guid-

ing the film from said selected supply roll to said package wrapping station, power means for rotating on demand a selected one of said supply rolls of film, and means for selectively engaging the selected one of said supply rolls of film with said power means to rotate the selected supply roll while the remaining supply rolls are maintained inactive.

2. The combination of claim 1 wherein said power means rotates said selected supply roll in a feed direction in response to a demand for film at said wrapping station while the remaining supply rolls are maintained inactive.

3. The combination of claim 2 wherein said power means is reversible for rotating said selected supply roll in a direction opposite said feed direction to rewind the film onto the selected supply roll while the remaining supply rolls are maintained inactive.

4. The combination of claim 1 including means to pull film off said selected supply roll while the selected supply roll rotates with limited freedom in a feed direction and while the remaining supply rolls are maintained inactive.

5. The combination of claim 4 wherein said film pull means is operated by said power means and the power means is reversible for rotating said selected supply roll in a direction opposite said feed direction to rewind the film onto the selected supply roll while the remaining rolls are maintained inactive.

6. The combination of claim 4 including a drag brake to prevent said selected supply roll of film from rotating freely in said feed direction faster than the film pulled off of the supply roll.

7. The combination of claim 1 including a spindle for receiving each of said supply rolls of film, said drive means including a drive train independently movable relative to said spindles, and means for selectively engaging a selected one of said spindles to said drive train.

8. The combination of claim 7 wherein said drive train includes a drive collar adjacent one end of each of said spindles, a recess in each of said drive collars facing said one end of the respective spindle, and a pin on said spindle selectively positionable in said recess to connect the spindle in said drive train.

9. The combination of claim 8 wherein said pin is spring biased toward said recess.

10. The combination of claim 7 wherein each of said spindles is mounted for limited axial movement from an inoperative position away from its respective drive collar and an operative position substantially abutting the drive collar.

11. The combination of claim 10 wherein said spindles are automatically connected to their respective drive collar when in said operative position.

12. The combination of claim 10 including means biasing said spindles away from their respective drive collars and means for locking said spindles in their operative positions.

13. The combination of claim 10 wherein each of said spindles are mounted on a shaft secured to their respective drive collars with the spindles independently rotatable relative to their shafts and movable along the shafts toward and away from said drive collars.

14. The combination of claim 13 including a pivotable spindle lock handle secured to said shaft at the end of each spindle opposite said drive collars, said lock handle having means defining a camming surface for engaging said spindle to move the spindle toward its respective drive collar as the spindle lock handle is pivoted from a first position to a second position.

15. The combination of claim 13 wherein said film supply rolls are positioned longitudinally on their spindles by annular collars at each end of the supply rolls, and wherein said spindle lock handles are disposed axially of their respective spindles and shafts when in said first position to permit the positioning collars on the end of the supply rolls adjacent the lock handles to be removed

from the spindles for replacement of the supply rolls.

16. In combination with a package wrapping machine having a package wrapping station, a frame, means on the frame rotatably mounting a supply roll of film for feeding to said package wrapping station, means on the frame guiding the film from the supply roll to the package wrapping station, a film return check member preventing return of the film from the package wrapping station to the supply roll, power means for rotating said supply roll of film in a rewind direction, and a rewind mechanism for sequentially rendering said film return check ineffective and actuating said power means to rotate the supply roll of film in said rewind direction.

17. The combination of claim 16 wherein said power means rotates said supply roll of film in a feed direction in response to a demand for film at said wrapping station and rotates the supply roll in a rewind direction in response to actuation of said rewind mechanism.

18. The combination of claim 16 wherein said film return check includes a friction member engaging the film to permit the film to move toward the package wrapping station while preventing the film from moving back toward the supply roll, and including switch means for actuating said power means to rotate the supply roll in a rewind direction, said rewind mechanism having means for sequentially moving said friction member out of engagement with said film and actuating said switch means.

19. The combination of claim 18 wherein said rewind mechanism includes a single actuating member for sequentially engaging said friction member to lift the friction member off of the film and for actuating said switch means.

20. The combination of claim 16 including means operated by said power means to pull film off said supply roll of film while the supply roll is free to rotate in a feed direction, said power means being reversible to rotate said supply roll in said rewind direction, said rewind mechanism sequentially rendering said film return check ineffective, rendering said film pull means ineffective and reversing said power means.

21. The combination of claim 20 wherein said film pull means includes a pressure roller and a draw roller gripping the film therebetween to pull the film from said film supply roll, said film return check includes a friction member engaging the film to permit the film to move toward the package wrapping station while preventing the film from moving back toward the supply roll, and including switch means for actuating said power means to rotate the supply roll in a rewind direction, said rewind mechanism having means for sequentially moving said friction member out of engagement with said film, separating said pressure and draw rollers and actuating said switch means.

22. The combination of claim 20 wherein said rewind mechanism includes a single actuating member for effecting the sequential movement of the friction member out of engagement with the film, the separation of the pressure and draw rollers, and the actuation of the switch means.

23. In combination with a package wrapping machine having a package wrapping station, a frame, means on the frame rotatably mounting a supply roll of film for feeding to said package wrapping station, means on the frame guiding the film from the supply roll to the package wrapping station, power means for rotating said supply roll of film in a rewind direction, means operated by said power means to pull film off said supply roll of film while the supply roll rotates with limited freedom in a feed direction, said power means being reversible to rotate said supply roll in said rewind direction, and a rewind mechanism for sequentially rendering said film pull means ineffective and reversing said power means.

24. The combination of claim 23 wherein said film pull means includes a pressure roller and a draw roller gripping the film therebetween to pull the film from said film supply roll, said rewind mechanism having means for sequentially separating said pressure and draw rollers and reversing said power means.

25. The combination of claim 24 wherein said pressure and draw rollers can be separated without reversing said power means.

26. A film feed mechanism for feeding film having high static electricity to a package wrapping machine or the like having a package wrapping station, comprising: a frame, means on the frame rotatably mounting a supply roll of film for feeding to said package wrapping station; means on the frame guiding the film to the package wrapping station; means on the frame to pull film off said supply roll of film while the supply roll is free to rotate in a feed direction, said film pull means including a rotatable draw roller over which said film passes and a pressure roller bearing against and in juxtaposition with said draw roller with said film therebetween; power means to rotate said draw roller to pull the film from said supply roll; and conveyor means adjacent said draw and pressure rollers to strip said film from said draw roller and direct the film to said guide means.

27. The film feed mechanism of claim 26 wherein said conveyor mechanism includes endless belt means looped about said draw roller and extending substantially horizontally therefrom, said belt means being driven by said draw roller forming a moving bed on which said film is conveyed away from the draw roller.

28. The film feed mechanism of claim 27 including a second conveyor mechanism disposed adjacent the end of said moving bed opposite said draw roller, said second conveyor mechanism extending generally vertically away from the moving bed to strip the film therefrom and direct it toward said guide means.

29. The film feed mechanism of claim 28 wherein said guide means has a portion above said endless belt means, and including a third conveyor mechanism overlying said endless belt means to receive film from said second conveyor mechanism and direct the film to said guide means portion.

30. The film feed mechanism of claim 29 wherein said third conveyor mechanism has an upper run and including a dancing roller disposed in a loop of film above said upper run, said dancing roller being movable in a path overlying said upper run in response to demand for film at said wrapping station.

31. The film feed mechanism of claim 26 wherein said draw roller has means for overrunning said power means to facilitate threading film between said draw roller and said pressure roller.

32. The film feed mechanism of claim 31 wherein said draw roller has a drive shaft driven by said power means and including a one-way clutch connecting the draw roller to its drive shaft to permit said overrunning of said power means.

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