United States Patent

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[54] **SHEET FEEDING ASSEMBLY**
15 Claims, 11 Drawing Figs.

[52] **U.S. Cl.** **271/62,** 271/39
[51] **Int. Cl.** **B65h 1/12**
[50] **Field of Search** 271/61, 62, 39, 28

[56] **References Cited**

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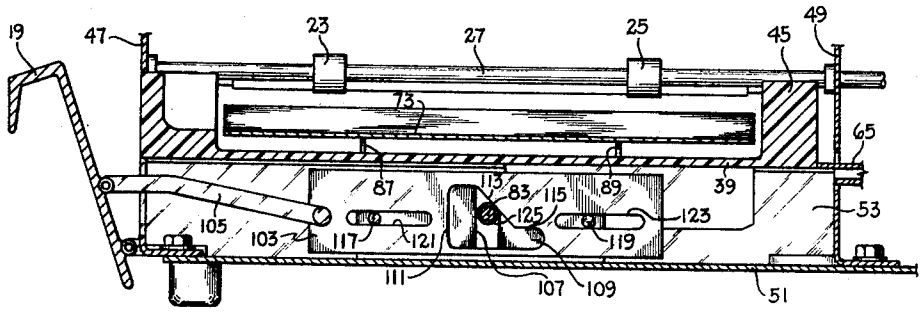
ABSTRACT: In a photocopying machine for copying original objects, for example books, a stack of copy paper sheets is contained in a paper feed drawer located at an operating position inside a compartment which is covered by a door. The forward end of the stack is lifted upwardly by an upwardly biased lifting member to a feeding position where the topmost sheet of the stack engages feed rollers which are rotatably driven to advance the sheets separately from the compartment for further use in the photocopying machine. To load the photocopying machine with another stack of copy paper sheets, the door is moved to uncover the compartment, and a cam connected to the door lowers the lifting member beneath the paper feed drawer. The paper feed drawer is held at the operating position by a latching mechanism, and an actuating member connected to the door releases the latching mechanism and enables the paper feed drawer to be pushed from the operating position by a resiliently biased plunger. The paper feed drawer may then be pulled to a loading position and a fresh stack of copy paper sheets placed therein. The drawer is then pushed to the operating position inside the compartment, thereby pressing the resiliently biased plunger backwardly until the latching mechanism again holds the drawer at the operating position. The door is then moved to cover the compartment, and in so doing moves the cam backwardly to enable the lifting member to move upwardly through the paper feed drawer and lift the forward end of the stack to the feeding position where the topmost sheet engages the paper feed rollers.



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SHEET 1 OF 5

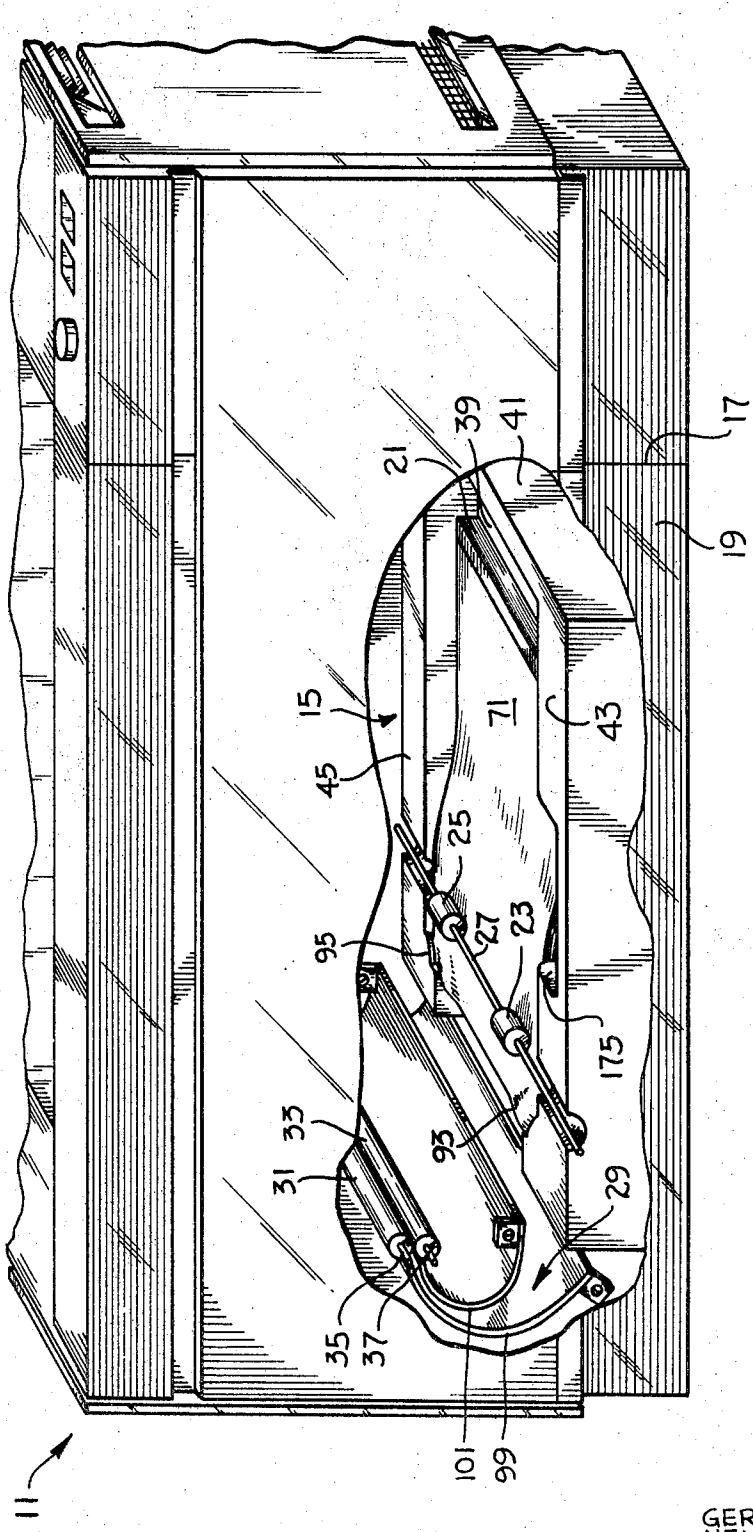

Fig. 1

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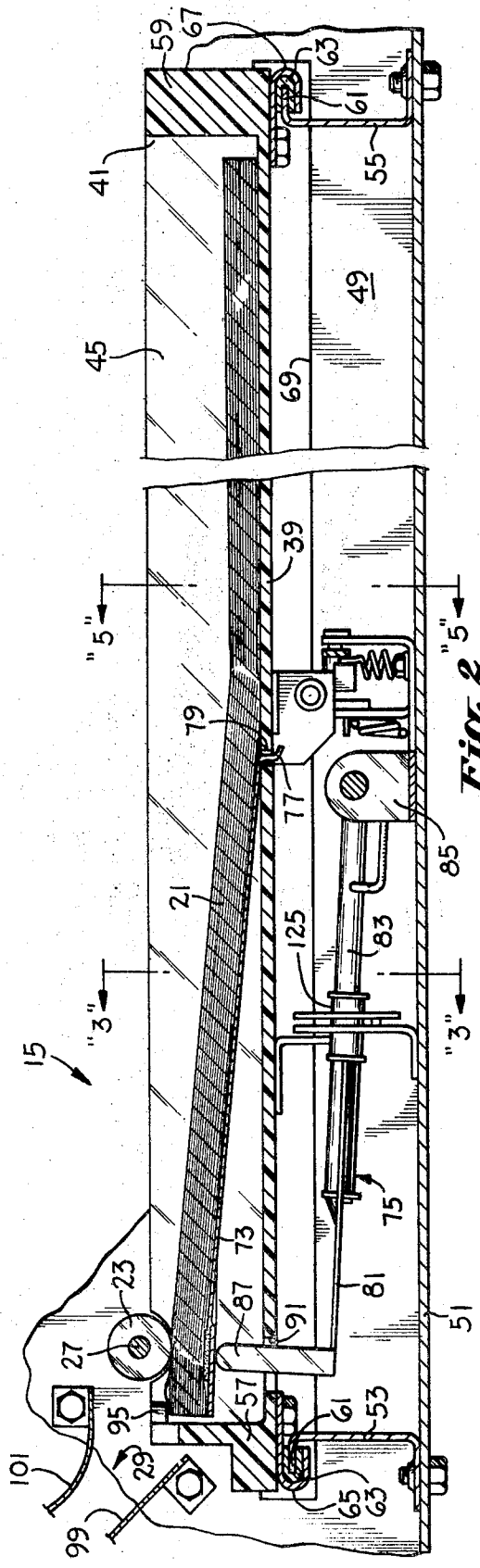

Fig. 2

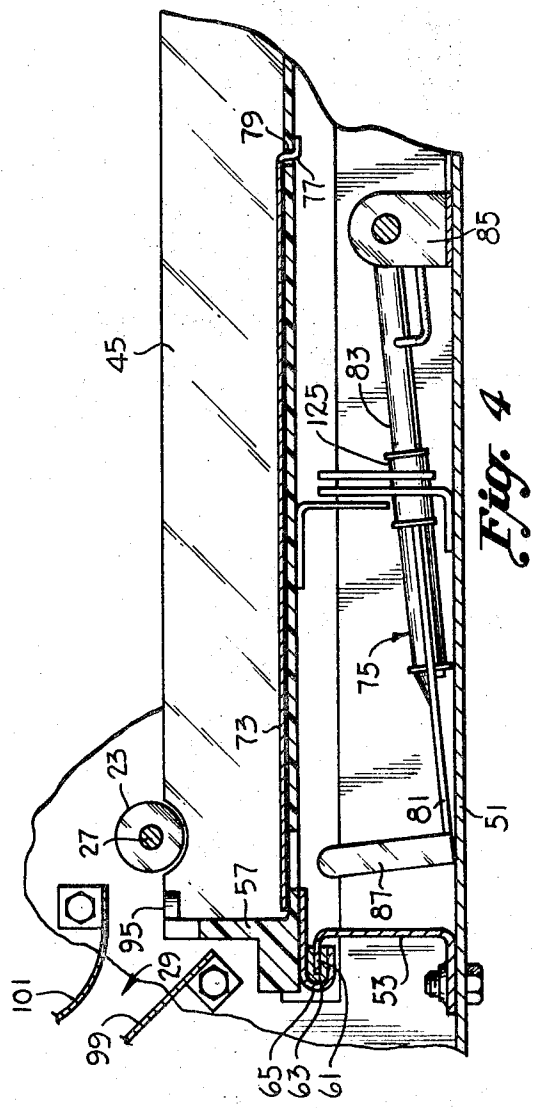

Fig. 4

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SHEET 3 OF 5

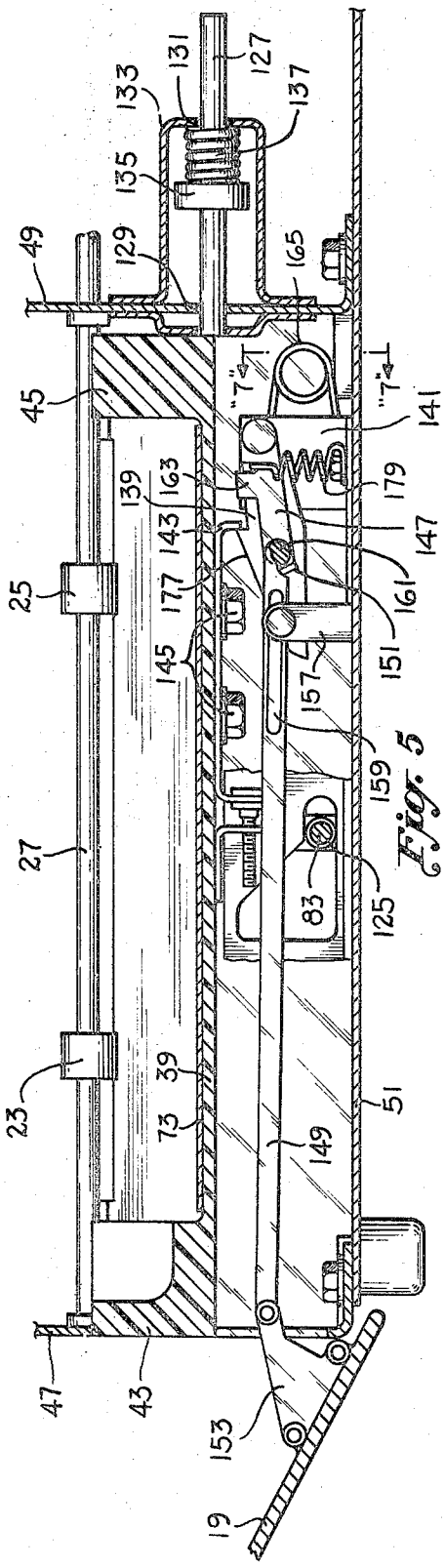

Fig. 5

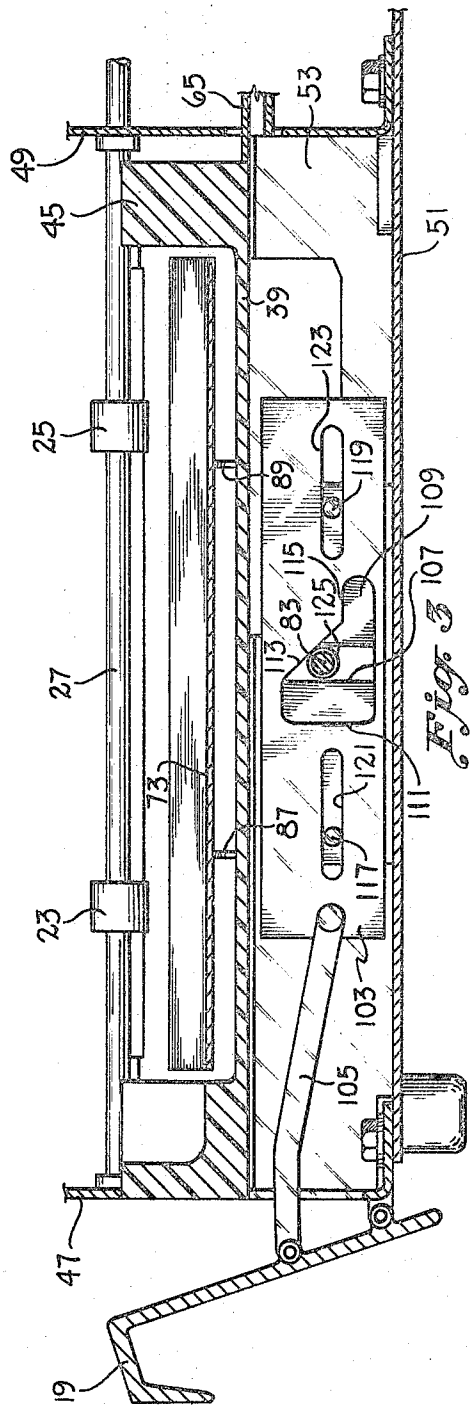

Fig. 3

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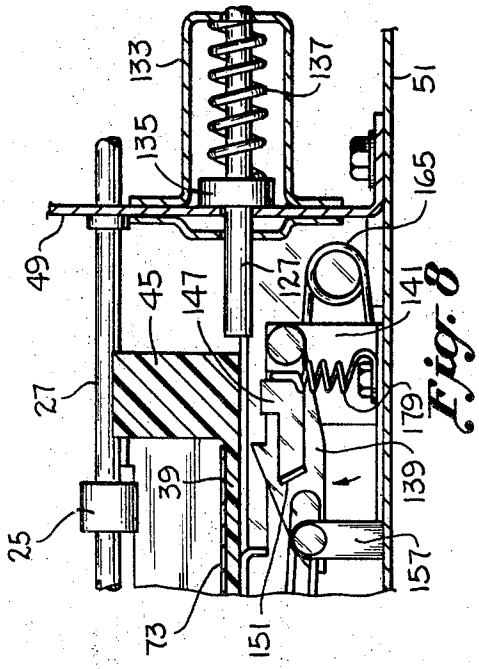

Fig. 8

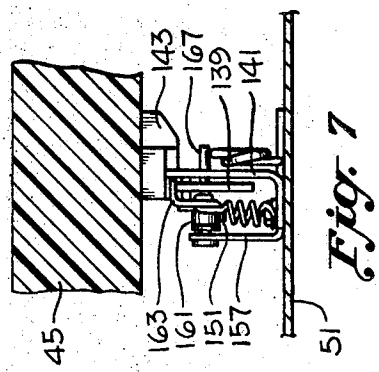

Fig. 7

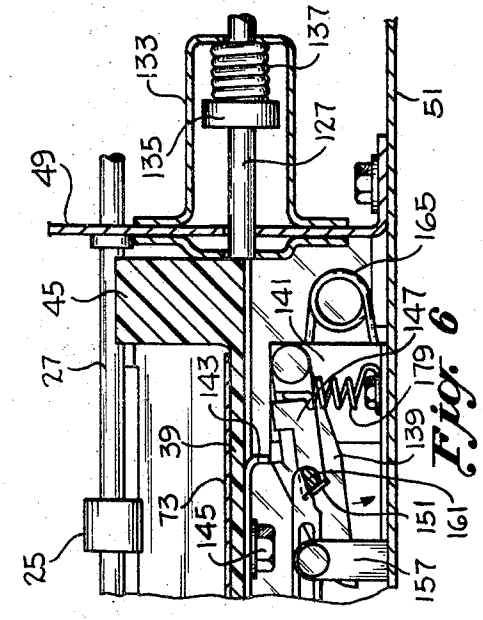

Fig. 6

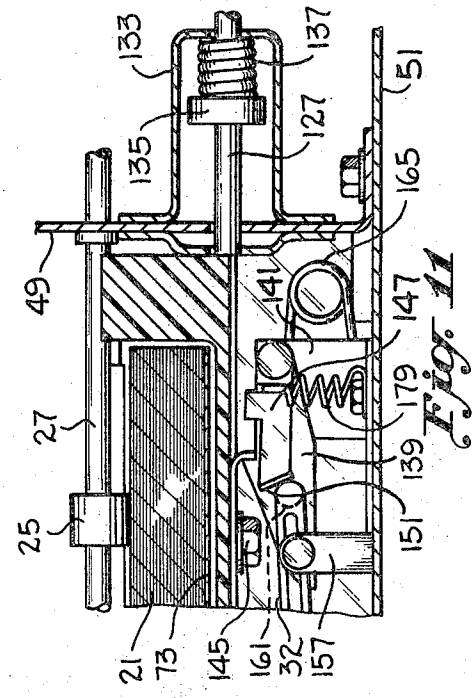

Fig. 11

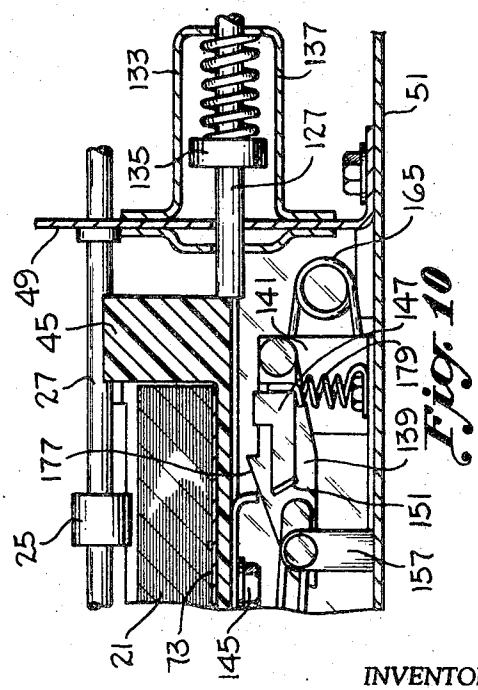

Fig. 10

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SHEET 5 OF 5

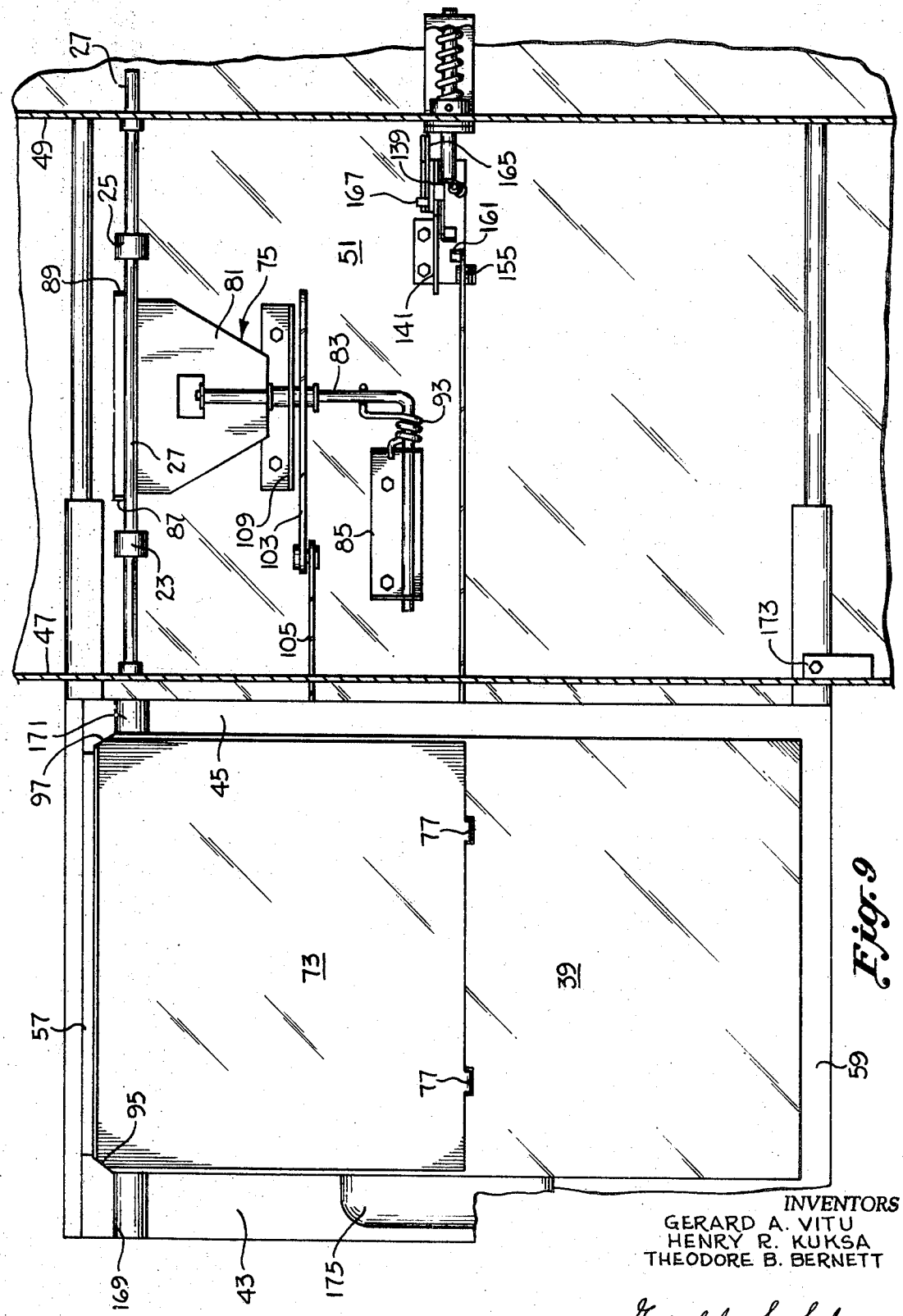

Fig. 9

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SHEET FEEDING ASSEMBLY

This invention relates to photocopying machines, and more particularly to a paper feed assembly for a photocopying machine which produces copies of original objects, for example books, on sheets of copy paper.

In a photocopying machine which produces copies of stationary original objects, for example books, the original object is placed on a window, which is usually located at the top of the machine, and the image thereof is projected onto a sheet of copy paper at an exposure station to form a copy of the original object. The sheets of copy paper are supplied to the exposure station from a stack of sheets which are horizontally supported at a feeding position inside a compartment of the photocopying machine. The stack of sheets are laterally confined between guide members which align the sheets for advancement from the compartment, and the sheets are normally advanced from the compartment by feed rollers which engage the topmost sheet of the stack. To prevent more than one sheet at a time from being fed from the compartment, sheet-separating means are usually provided to separate an advancing sheet from the remainder of the stack. The feed rollers and the sheet-separating means are usually supported for generally vertical movement so as to move downwardly in engagement with the stack as the stack diminishes upon advancement of the sheets from the compartment.

The stack of copy paper is usually located in a compartment which is horizontally spaced from the window where the object to be copied is placed, and normally the compartment is located at the top of the machine so as to be easily accessible by an operator in loading a fresh stack of copy paper sheets into the photocopying machine. Such a location is usually necessitated by the manual manipulations often required to place a fresh stack of copy paper sheets in the feeding position in the compartment. Typically the feed rollers and the sheet-separating means must be moved from the feeding position to enable a fresh stack of sheets to be inserted into the compartment, and then they must be moved into proper engagement with the stack so as to enable the sheets to be fed from the compartment during subsequent use of the photocopying machine.

However, in a crowded office situation a photocopying machine of the above described type is often undesirable, because it occupies too much floor space. When the paper storage compartment is horizontally spaced from the window for the original document, the machine must necessarily have a horizontal dimension substantially equal to the combined sizes of both the original document and the stack of copy paper. Since the stack of copy paper sheets must be supported in a generally horizontal position, it becomes apparent that to minimize the floor space occupied by the machine it is desirable to locate the paper storage compartment beneath the window for supporting the original object. However, in such a location, the paper feed rollers and the sheet-separating means are located in a relatively inaccessible position inside the photocopying machine where it is difficult for an operator to perform the manual manipulations previously described in loading a fresh stack of copy paper sheets into the storage compartment.

Accordingly, an object of the present invention is to provide a photocopying machine having a paper storage compartment located beneath the window for supporting the original object, wherein a fresh stack of copy paper sheets may be loaded into the photocopying machine without moving sheet-advancing means or sheet-separating means from the feeding position during the loading operation.

Another object of the present invention is to provide a photocopying machine having a paper storage compartment wherein the feed rollers are fixedly located in the compartment, and a portion of the stack of copy paper sheets is moved into engagement with the feed rollers.

A further object of the present invention is to provide a photocopying machine having a paper storage compartment located beneath the window for supporting an original object,

wherein a stack of copy paper sheets may be placed on a horizontal support at a position outside the compartment and then moved to an operating position inside the compartment.

Still other objects, features and advantages for the present invention will be apparent to those skilled in the art from a reading of the following detailed description of a single embodiment of the invention, taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a partial cutaway perspective view of a preferred embodiment of a photocopying machine having a paper feed assembly according to the present invention, and showing a stack of copy paper sheets in a feeding position with the topmost sheet being advanced forwardly from the feeding position;

FIG. 2 is a longitudinal cross-sectional view of the sheet-feeding assembly shown in FIG. 1;

FIG. 3 is a sectional view taken along the lines 3–3 in FIG. 2 and illustrating the condition of the sheet-feeding assembly when all the sheets of copy paper have been fed from the compartment and with the door covering the compartment being pulled open;

FIG. 4 is a fragmentary view of the sheet-feeding assembly shown in FIG. 2, and illustrating the condition of the paper feed drawer when the door is moved further from the opening of the compartment;

FIG. 5 is a sectional view taken along the lines 5–5 in FIG. 2, and illustrating the mechanical connections between the door and a latching mechanism which holds the paper feed drawer in an operating position in the compartment;

FIG. 6 is a partial view of the sheet-feeding assembly in FIG. 5, illustrating the condition of the latching mechanism as the door is moved from the opening of the storage compartment so as to release the paper feed drawer from an operating position in the compartment;

FIG. 7 is a partial sectional view taken along the lines 7–7 in FIG. 5;

FIG. 8 is a view of FIG. 6, illustrating the paper feed drawer being pushed from the compartment upon the release of the latching mechanism;

FIG. 9 is a plan view of a sheet-feeding assembly showing the paper feed drawer outside the photocopying machine in a loading position and illustrating the lifting mechanism and the latching device mounted on the floor of the photocopying machine inside the compartment;

FIG. 10 is a fragmentary view of the latching mechanism shown in FIG. 5, and illustrating the condition of the latching mechanism when a paper feed drawer loaded with a stack of copy paper sheets is moved into the compartment;

FIG. 11 is a fragmentary view of the latching mechanism shown in FIG. 5, illustrating the condition of the latching mechanism when the door is moved to cover the opening of the storage compartment.

Referring generally to the FIGS. in the drawings, and particularly to FIG. 1, there is shown a photocopying machine, generally indicated 11, for copying original documents onto sheets of copy paper. The photocopying machine 11 includes a housing 13 having a lower compartment, generally indicated 15, with an opening, generally indicated 17, in the front of the machine 11 which is covered by a door 19. The compartment 15 contains a stack 21 of copy paper sheets in a feeding position, and the sheets are advanced from the feeding position by sheet-advancing means in the form of two rubber feed rollers 23, 25 respectively, which are mounted on a drive shaft 27. The drive shaft 27 is rotatably driven by suitable means, not shown, to advance the sheets separately from the feeding position and through an exit throat, generally indicated at 29, which guides the incoming sheets into a nip of a pair of cooperating exit rollers 31, 33 which are mounted on drive shafts 35, 37 respectively. The drive shafts 35, 37 are rotatably driven by suitable means, not shown, to remove the sheets from the storage compartment 15 for further processing in the machine 11. The means for rotatably driving the drive shafts 27, 35, 37 have been omitted from the description, since they form no part of the present invention.

Inside the housing 13, the stack 21 is supported on a floor 39 of a paper feed drawer 41 located at an operating position in the compartment 15 beneath the feed rollers 23, 25. The sheets forming the stack 21 are laterally confined between front and back sidewalls 43, 45 respectively, of the paper feed drawer 41 which serve to align the stack 21 with the exit throat 29. The drive shaft 27 carrying the feed rollers 23, 25 is rotatably supported between front and back support walls 47, 49 which are connected to a base plate 51 in the photocopying machine 11 to form the compartment 15. The paper feed drawer 41 is supported in vertical spaced relation to the feed rollers 23, 25 by symmetrically opposite forward and rearward guide rails 53, 55 respectively, which are mounted on the base plate 51 beneath forward and rearward walls 57, 59 respectively, of the paper feed drawer 41.

As more particularly shown in FIG. 2, the rail 53 has an upper flange 61 extending laterally therefrom with a U-shaped bearing member 63 mounted thereon to enable the drawer 41 to slide from the compartment 15. Attached to the bottom of the paper feed drawer 41 and beneath the forward and rearward walls 57, 59 respectively, are symmetrically opposite forward and rearward guide members 65, 67 respectively, which extend through an opening 69 in the back support wall 49. The guide member 65 is U-shaped and engages the surface of the bearing 63 so as to support the paper feed drawer 41 and guide it during movement along the rail 53. The other rail 55 and the other cooperating guide member 67 are generally identical to the rail 53 and the guide member 65 which have been previously described, and accordingly identical reference numerals have been placed on identical portions thereof.

The paper feed drawer 41 may be constructed from a suitable light weight material, such as plastic or aluminum. The bearings 63 mounted on the flanges 61 of the guide rails 53, 55 may be constructed from a suitable material, such as rigid vinyl plastic so as to provide a smooth surface having a low coefficient of friction to enable the paper feed drawer 41 to slide along the guide rails 53, 55.

As shown, the forward end of the stack 21 is lifted upwardly to a feeding position with the topmost sheet 71 engaging the feed rollers 23, 25. The forward end of the stack 21 is supported by a plate 73 hingedly connected by suitable means to the floor 39 of the paper feed drawer 41, and the plate 73 is lifted upwardly by a lifting member, generally indicated 75. As more particularly shown in FIGS. 2 and 9, the plate 73 is hingedly connected to the paper feed drawer 41 by tabs 77 formed on the rearward end of the plate 73 which are received through openings 79 formed in the floor 39 and bent rearwardly so as to form a hinged connection over which the copy paper sheets may easily slide. The lifting member 75 which engages the back side of the hinged plate 73 includes a finger bracket 81 swivelly supported on the end of a rod 83 which is bent to an L-shape and pivotally mounted on the base plate 51 by a suitable bracket 85. The finger bracket 81 has two spaced upright fingers 87, 89 which are received through an opening 91 formed in the floor 39 of the paper feed drawer 41 to engage the hinged plate 73. The swivel connection of the finger bracket 81 enables the lifting pressure applied to the backside of the plate 73 to be equalized between the two upright fingers 87, 89. The lifting member 75 is resiliently biased upwardly to move the hinged plate 73 toward the feed rollers 23, 25 by means of a torsion spring 93 which is disposed about the rod 83 to urge it upwardly.

As the topmost sheet 71 is advanced from the paper feed drawer 41 by the rotatably driven feed rollers 23, 25, the adjacent sheets of the stack 21 move forward due to the frictional contact between the sheets of copy paper. To prevent more than one sheet at a time from being fed from the feeding position, separating means are provided to separate the advancing topmost sheet 71 from the remainder of the stack 21. In the preferred embodiment, the separating means are in the form of corner separators 95, 97 which are symmetrically opposite and engage the forward corners of the topmost sheet 71. The corner separators 95, 97 may be formed integrally with the paper feed drawer 41 and extend across the floor 39 from the forward wall 57 to the sidewalls 43, 45 respectively.

Upon advancement of the topmost sheet 71 by the rotatably driven feed rollers 23, 25, the corner separators 95, 97 hold the forward corners of the sheet 71 and cause them to buckle and bend as shown in FIGS. 1 and 2. As is known, the forward corners of the topmost sheet 71 continue to bend until the resiliency of the advancing sheet causes the forward corners thereof to move over the corner separators 95, 97, thereby separating the topmost sheet 71 from the remainder of the stack 21. Further advancement of the topmost sheet 71 moves it into the exit throat 29 which, in the preferred embodiment, is formed by forward and rearward arcuate-shaped walls 99, 101 respectively, supported between the front and back support walls 47, 49. The converging arcuate-shaped exit throat 29 guides the incoming sheet into the nip of the rotatably driven rollers 31, 33 which remove the sheet from the compartment 15 for further processing in the photocopying machine 11.

As the sheets forming the stack 21 are fed from the feeding position, the stack 21 diminishes and the upwardly biased lifting member 75 presses the hinged plate 73 upwardly to bring the succeeding topmost sheet of the diminishing stack 21 into engagement with the feed rollers 23, 25. The lifting member 75 continues to move upwardly as the stack 21 diminishes until the last sheet has been fed from the feeding position, whereupon the hinged plate 73 comes into contact with the feed rollers 23, 25 and the photocopying machine 11 must be loaded with another stack of copy paper sheets for further use.

When it is desirable to load another stack of copy paper sheets into the photocopying machine 11, it is first necessary to move the door 19 to uncover the opening 17 of the compartment 15, lower the upwardly biased lifting member 75, and move the paper feed drawer 41 from the operating position inside the compartment 15 to a loading position outside the photocopying machine 11 as shown in FIG. 9. To facilitate the lowering of the upwardly biased lifting member, the door 19 is hingedly connected to the wall 47, and operating means are provided to move the upwardly biased lifting member 75 downwardly to the position shown in FIG. 4 in response to the movement of the door 19 to uncover the opening 17.

As more particularly shown in FIG. 3, the operating means is in the form of a camming plate 103 which is connected to the door 19 by a suitable linkage 105 so as to move laterally as the door 19 is opened. The rod 83 of the lifting member 75 extends through a vertical slot 107 formed in a bracket 109 mounted on the base plate 51, and through an opening 111 formed in the camming plate 103 which is partially defined by a diagonal camming surface 113 leading downwardly to a horizontal surface 115. The camming plate 103 is supported for lateral sliding movement in response to movement of the door 19 by laterally protruding studs 117, 119 on the bracket 109 which are received in horizontal slots 121, 123 respectively, formed in the camming plate 103 on laterally opposite sides of the opening 111. As the door is moved to uncover the opening 17, the lateral movement of the diagonal camming surface 113 forces the rod 83 downwardly until the lifting fingers 87, 89 are beneath the floor 39 of the paper feed drawer 41 as shown in FIG. 4. To facilitate the downward movement of the rod 83 by the diagonal camming surface 113, the portion of the rod 83 extending through the vertical slot 107 and the opening 111 may be covered by a sleeve 125 constructed from a suitable material, such as nylon which provides an easy sliding surface. Upon further movement of the door 19, the rod 83 moves downwardly beneath the horizontal surface 115 of the camming plate 103 as shown in FIG. 5, which maintains the lifting member 75 in the lowered position as the camming plate 103 continues to move laterally in response to the continued opening movement of the door 19.

To facilitate the movement of the paper feed drawer 41 from the operating position inside the compartment 15 to the loading position, the photocopying machine 11 is provided with means to move the paper feed drawer 41 a short distance

through the opening 17 in response to the uncovering movement of the door 19. As more particularly shown in FIG. 5, when the paper feed drawer 41 is at the operating position, it is being urged toward the opening 17 by moving means in the form of a plunger 127 located outside the compartment 15 and resiliently biased to urge the paper feed drawer 41 from the operating position. The plunger 127 is supported for sliding movement into the compartment 15 with one end thereof extending through a bore 129 formed in the wall 49, and the opposite end extending through a bore 131 formed in a bracket 133 attached to the backside of the wall 49. The plunger 127 has a collar 135 located between the wall 49 and the bracket 133, and the plunger 127 is urged into engagement with the paper feed drawer 41 by resilient biasing means in the form of a coiled spring 137 disposed about the plunger 127 and compressed between the collar 135 and the bracket 133.

While the paper feed drawer 41 is at the operating position and being urged toward the opening 17 by the plunger, the paper feed drawer 41 is prevented from moving from the operating position by latching means. As shown, the latching means is in the form of a latching hook 139 which is pivotally supported by a bracket 141 mounted on the base plate 51, and engages the backside of a latching flange 143 attached to the bottom of the paper feed drawer 41 by suitable means, such as screws 145. The latching hook 139, in conjunction with the latching flange 143 on the bottom of the paper feed drawer 41, determines the operating position of the paper feed drawer 41, and the latching flange 143 may be adjusted laterally so as to vary the operating position relative to the feed rollers 23, 25.

To enable the resiliently biased plunger 127 to push the paper feed drawer 41 through the opening 17 of the compartment 15 upon the uncovering movement of the door 19, the latching mechanism is provided with releasing means in the form of a pawl 147 and an actuating rod 149. The pawl is supported by the bracket 141 for pivotal movement about the same axis as the latching hook 139, and has a camming flange 151 for engagement by the actuating rod 149. The actuating rod 149 is connected to the door 19 by a bellcrank 153, and is supported for sliding movement past the actuating cam 151 of the pawl 147 by a pin 155 protruding from a post 157 mounted on the base plate 51. As shown, the pin 155 is received into a slot 159 extending longitudinally in the actuating rod 149 and serves to guide the rod 149 during the sliding movement past the actuating cam 151 of the pawl 147.

Upon further opening movement of the door 19, the rod 149 slides laterally along the pin 155 until a stud 161 on the end of the rod 149 engages the backside of the actuating cam 151 and forces the pawl 147 downwardly. As shown in FIGS. 5 and 7, the pawl 147 has a flange 163 extending over the latching hook 139, and as the pawl 147 is forced downwardly in response to the opening movement of the door 19, the flange 163 forces the latching hook 139 downwardly until the paper feed drawer 41 is released from the operating position, as shown in FIG. 6.

When the latching mechanism releases the paper feed drawer 41 from the operating position, the compressed spring 137 pushes the plunger 127 into the compartment 15, as shown in FIG. 8, and moves the paper feed drawer 41 through the opening 17. At substantially the same time, the continued opening movement of the door 19 moves the stud 161 on the actuating rod 149 past the camming flange 151 of the pawl 147, and the latching hook 139 is pivoted upwardly by means of a torsion spring 165. As more particularly shown in FIGS. 7 and 9, the torsion spring 165 is disposed on the forward side of the bracket 141 between the base plate 51 and a pin 167 protruding laterally from the latching hook 139. The torsion spring 165 pivots the latching hook 139 upwardly, and the pawl 147 is carried upwardly therewith by the flange 163 extending over the top of the latching hook 139.

As more particularly shown in FIG. 8, the compressed spring 137 pushes the plunger 127 into the compartment 15 and forces the paper feed drawer 41 from the operating position until the collar 135 of the plunger 127 engages the wall 49. As the paper feed drawer 41 moves through the opening 17 of the compartment 15, the forward and rearward guides 65, 67 respectively, slide along the smooth surface provided by the bearings 63 mounted on the flanges 61 of the forward and rearward guide rails 53, 55 respectively. During the movement of the paper feed drawer 41 through the opening 17, the feed rollers 23, 25 carried by the shaft 27 and the portion of the wall 47 supporting the shaft 27 are received through recesses 169, 171 formed in the upper surfaces of the front and back walls 43, 45 respectively, of the paper feed drawer 41.

After the paper feed drawer 41 has been pushed a short distance from the compartment 15 by the resiliently biased plunger 127, the drawer 41 may be manually pulled the remainder of the distance to the loading position as shown in FIG. 9. When the paper feed drawer reaches the loading position, a stop 173, located on the rearward guide 67, engages the wall 49 to prevent the paper feed drawer 41 from being pulled entirely from the compartment 15. To facilitate the movement of the paper feed drawer 41 to the loading position, a handle recess 175 is provided adjacent the edge of the drawer 41 which may be easily gripped by an operator.

When the paper feed drawer 41 is at the loading position outside the photocopying machine 11, as more particularly shown in FIG. 9, it is readily accessible by an operator. The hinged plate 73 lies flat against the floor 39 and there are parts of the photocopying machine which must be moved before placing a stack of copy paper sheets in the paper feed drawer 41. Accordingly, an operator may easily insert a stack of sheets onto the floor 39 of the paper feed drawer 41 beneath the rearwardly extending corner separators 95, 97 and between the sidewalls 45, 47 which serve to align the paper sheets. Thus, the paper feed drawer 41 may be easily loaded with a fresh stack of copy paper in preparation for further use of the photocopying machine 11.

After loading a fresh stack of sheets into the paper feed drawer 41, the drawer is manually pushed back through the opening 17 into the compartment 15. As the drawer 41 slides into the compartment along the guide rails 53, 55, the backside of the drawer 41 engages the plunger 127 and pushes it through the opening 129 in the back support wall 49 as shown in FIG. 10. The continued movement of the paper feed drawer 41 into the compartment 15 brings the latching flange 143 into engagement with a camming surface 177 formed on the latching hook 139. As the paper feed drawer 41 continues to move into the compartment 15, the latching hook 139 is pivoted downwardly until the latching flange 143 moves past the camming surface 177 whereupon the torsion spring 165 pivots the latching hook 139 upwardly so as to hold the paper feed drawer 41 at the operating position in the compartment 15.

When the paper feed drawer 41 is at the operating position, the forward end of the stack 21 of sheets may be lifted upwardly against the feed rollers 23, 25 by moving the door 19 to cover the opening 17 of the compartment 15. As the door 19 is pivoted upwardly, both the camming plate 103 and the actuating rod 149 move laterally inside the compartment 15. As shown in FIG. 5, the lifting member 75 is maintained in the lowered position by the horizontal surface 115 of the camming plate 103. As the actuating rod 149 moves further into the compartment 15, the stud 161 on the end of the rod 149 engages the front side of the camming flange 151 and pivots the pawl 147 upwardly out of engagement with the latching hook 139. The pawl 147 is resiliently biased downwardly by a tension spring 179 connected between the pawl 147 and the base plate 51, and as the stud 161 moves past the camming flange 151, the pawl 147 is pivoted downwardly until the flange 163 engages the top of the latching hook 139 in preparation for another loading operation.

Upon further covering movement of the door 19, the camming plate 103 continues to slide laterally in the compart-

ment 15 until the diagonal camming surface 113 moves into engagement with the sleeve 125 on the rod 83. Further inward movement of the camming plate 103 enables the resiliently biased rod 83 to move upwardly with the spaced upright fingers 87, 89 being received through the opening in the floor 39 of the paper feed drawer 41 until they engage the backside of the hinged plate 73. Continued upward movement lifts the portion of the stack on the hinged plate 73 upwardly to the feeding position with the topmost sheet being pressed into engagement with the feed rollers 23, 25, in preparation for further use of the photocopying machine 11.

While only a single embodiment has been illustrated and described, it will be apparent to those skilled in the art that various modifications and improvements may be made without departing from the scope and spirit of the invention. Accordingly, it is to be understood that the invention is not to be limited by the illustrative embodiment, but only by the scope of the appended claims.

We claim:

1. In a photocopying machine, the combination comprising a compartment having an opening, a lifting member supported for generally vertical movement in said storage compartment, resilient biasing means for urging said lifting member upwardly, a door for covering said opening of said storage compartment and supported for movement relative thereto, said door being movable in one direction for uncovering said opening of said storage compartment, operating means operable upon the uncovering movement of said door for moving said resiliently biased lifting member downwardly, a paper feed drawer having a floor for supporting a stack of sheets, said paper feed drawer being movable through the opening of said storage compartment to an operating position above said lifting member into the storage compartment, said floor of said paper feed drawer having an opening formed therein for movement of said lifting member therethrough, said door being movable in another direction for covering the opening of said storage compartment, and said operating means being operable upon the covering movement of said door for enabling said resiliently biased lifting member to move upwardly through the opening in the floor of said paper feed drawer to lift a portion of a stack of sheets thereon to a feeding position from which the sheets may be advanced.

2. In a photocopying machine according to claim 1, the combination further comprising latching means for holding said paper feed drawer at the operating position in said compartment, said paper feed drawer being supported for sliding movement through the opening of said compartment, moving means for urging said paper feed drawer from the operating position in said compartment, said latching means being operable in response to the uncovering movement of said door to release said paper feed drawer for movement from the operating position, and said moving means being operable in response to the release of said latching means for moving said paper feed drawer from the operating position through the opening of said storage compartment.

3. A photocopying machine according to claim 2, wherein said latching means includes a latching flange on said paper feed drawer, a latching hook located in said compartment and engaging said latching flange to hold said paper feed drawer at the operating position, said latching hook being supported for movement relative to said latching flange, releasing means for moving said latching hook from engagement with said latching flange, and said releasing means being operable upon the uncovering movement of said door to release said paper feed drawer for movement from the operating position in said compartment.

4. In a photocopying machine according to claim 3, said latching hook being supported for generally vertical movement in said compartment, resilient biasing means for urging said latching hook upwardly, said latching hook having a camming surface formed thereon for engagement by said latching flange, said latching hook being moved downwardly upon engagement of said camming surface by said latching flange during movement of said paper feed drawer to the operating position in said compartment, and said latching hook being moved upwardly by said resilient biasing means upon movement of said latching flange past said camming surface to hold said paper feed drawer at the operating position in said compartment.

5. In a photocopying machine according to claim 4, said releasing means including a pawl supported for generally vertical movement in said compartment, said pawl having a latching hook flange for engaging said latching hook upon downward movement of said pawl to move said latching hook downwardly from engagement with said latching flange, an actuating rod supported for generally lateral movement in said compartment and being connected to said door for movement therewith, said pawl having a camming flange formed thereon for engagement by said actuating rod during lateral movement thereof, said actuating rod being movable in one direction past said camming flange during the uncovering movement of said door, and said camming flange of said pawl being engaged by said actuating rod during the uncovering movement of said door to move said pawl downwardly to release said paper feed drawer for movement from the operating position.

6. In a photocopying machine according to claim 5, said actuating rod being movable in another direction past said camming flange during the covering movement of said door, said camming flange being engaged by said actuating rod during the covering movement of said door to move said pawl upwardly from engagement with said latching hook, and resilient biasing means for urging said pawl downwardly upon movement of said actuating rod past the camming flange to bring said latching hook flange into engagement with said latching hook.

7. A photocopying machine according to claim 1, wherein said operating means includes a cam for engaging said upwardly biased lifting member, said cam being supported for sliding movement relative to said lifting member, means connecting said cam to said door for movement therewith, said cam being movable in one direction upon the opening movement of said door to lower said upwardly biased lifting member, and said cam being movable in another direction upon the covering movement of said door to enable said upwardly biased lifting member to move upwardly through the opening in the floor of said paper feed drawer at the operating position in said compartment.

8. In a photocopying machine according to claim 7, said lifting member being pivotally supported in said compartment and having a substantially upright portion for movement through the opening in the floor of said paper feed drawer, said cam being supported for sliding movement on said pivotally supported lifting member, said cam having a surface portion for lowering said upright portion of said lifting member beneath the floor of said paper feed drawer during the initial uncovering movement of said door, and said cam having another surface portion for holding said lifting member in a lowered position during subsequent uncovering movement of said door.

9. In a photocopying machine according to claim 8, the combination further comprising a plate for supporting a portion of a stack of copy paper sheets contained in said paper feed drawer, said plate being hingedly connected to said floor and covering the opening formed therein, and said plate being pivoted upwardly to lift the portion of a stack of copy paper sheets supported thereon by the movement of the upright portion of the lifting member through the opening formed in the floor of said paper feed drawer upon the covering movement of said door.

10. In a photocopying machine according to claim 1, the combination further comprising sheet-advancing means for advancing sheets of copy paper from the feeding position in said compartment, said sheet-advancing means being located in said compartment above the floor of said paper feed drawer, and said upwardly biased lifting member being operable upon the covering movement of said door to move through

the opening in the floor of said paper feed drawer to lift a portion of a stack of sheets supported thereon and press the topmost sheet of the stack into engagement with said sheet-advancing means at the feeding position.

11. In a photocopying machine according to claim **10**, the combination further comprising sheet-separating means for separating an advancing sheet from the remainder of the stack supported on the floor of said paper feed drawer, and said sheet-separating means being located in vertically spaced relation with said sheet-advancing means for engaging a sheet being advanced from the feeding position by said sheet-advancing means.

12. In a photocopying machine according to claim **10**, the combination further comprising sheet-separating means for separating an advancing sheet at the feeding position from the remainder of the stack supported on the floor of said paper feed drawer, and said sheet-separating means being carried by said paper feed drawer for movement therewith from the operating position in said compartment.

13. In a photocopying machine according to claim **1**, said paper feed drawer being supported for sliding movement relative through the opening of said compartment, said paper feed drawer being slidably movable from the operating position inside the compartment to a loading position outside the compartment to enable a stack of copy paper sheets to be placed thereon, and said paper feed drawer being slidably movable through said opening to said operating position in said compartment.

14. In a photocopying machine according to claim **13**, the combination further comprising sheet-advancing means for advancing sheets of copy paper from the feeding position in said compartment, said sheet-advancing means being located in the said compartment above said operating position, said paper feed drawer being supported for sliding movement to said feeding position in vertically spaced relation to said sheet-advancing means in said compartment, and said resiliently biased lifting member being operable upon the covering movement of said door to move upwardly through the opening in the floor of said paper feed drawer to lift a portion of a stack supported thereon and press the topmost sheet into engagement with said sheet-advancing means at the feeding position.

15. In a photocopying machine according to claim **14**, the combination further comprising sheet-separating means for separating an advancing sheet at the feeding position from the remainder of the stack supported on the floor of said paper feed drawer, and said sheet-separating means being carried by said paper feed drawer for movement therewith from the operating position in said compartment.