

June 26, 1951

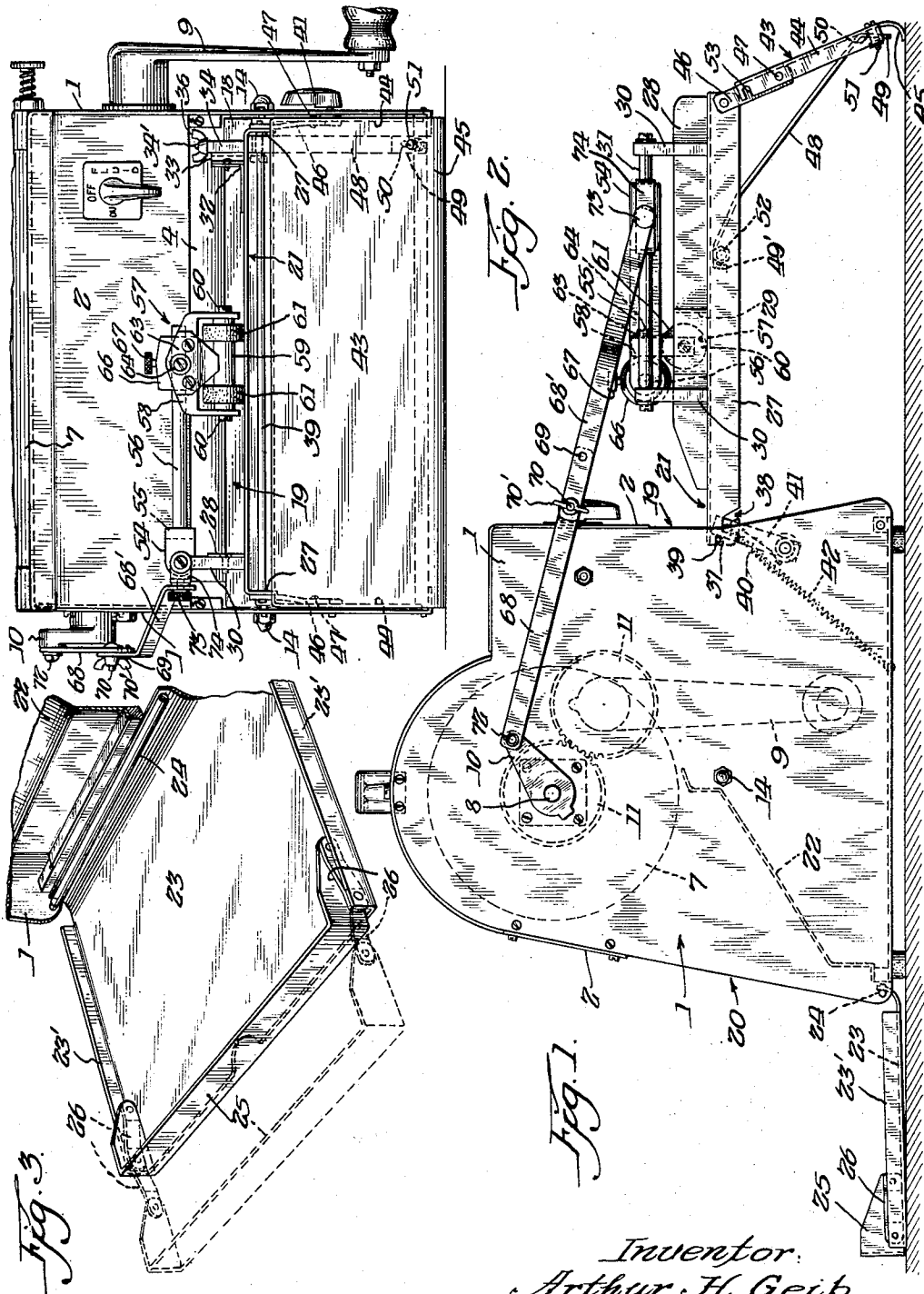
A. H. GEIB

2,558,046

DUPLICATING MACHINE FEED CONSTRUCTION

Filed Sept. 9, 1947

3 Sheets-Sheet 1



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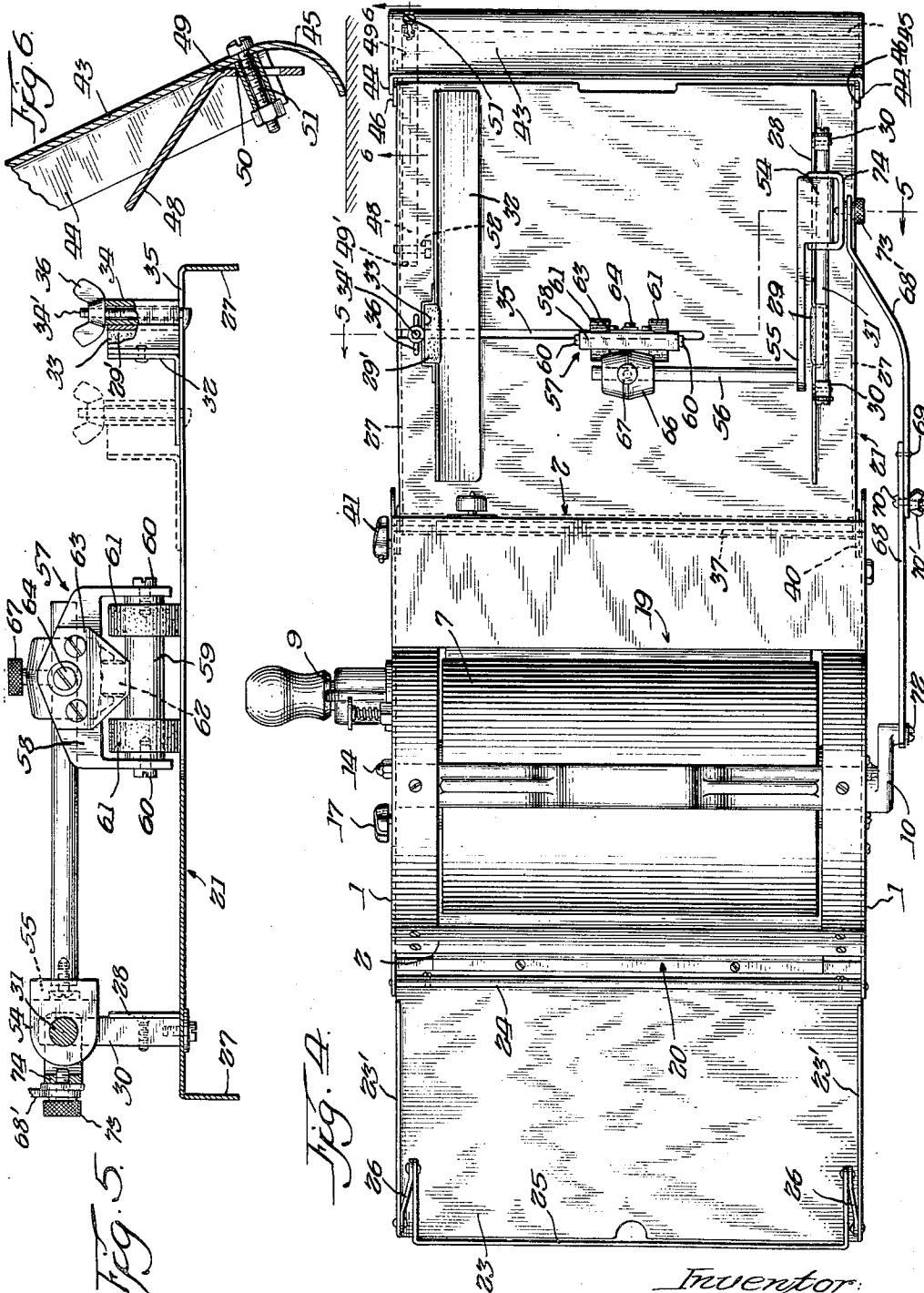
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2,558,046

DUPLICATING MACHINE FEED CONSTRUCTION

Filed Sept. 9, 1947

3 Sheets-Sheet 2



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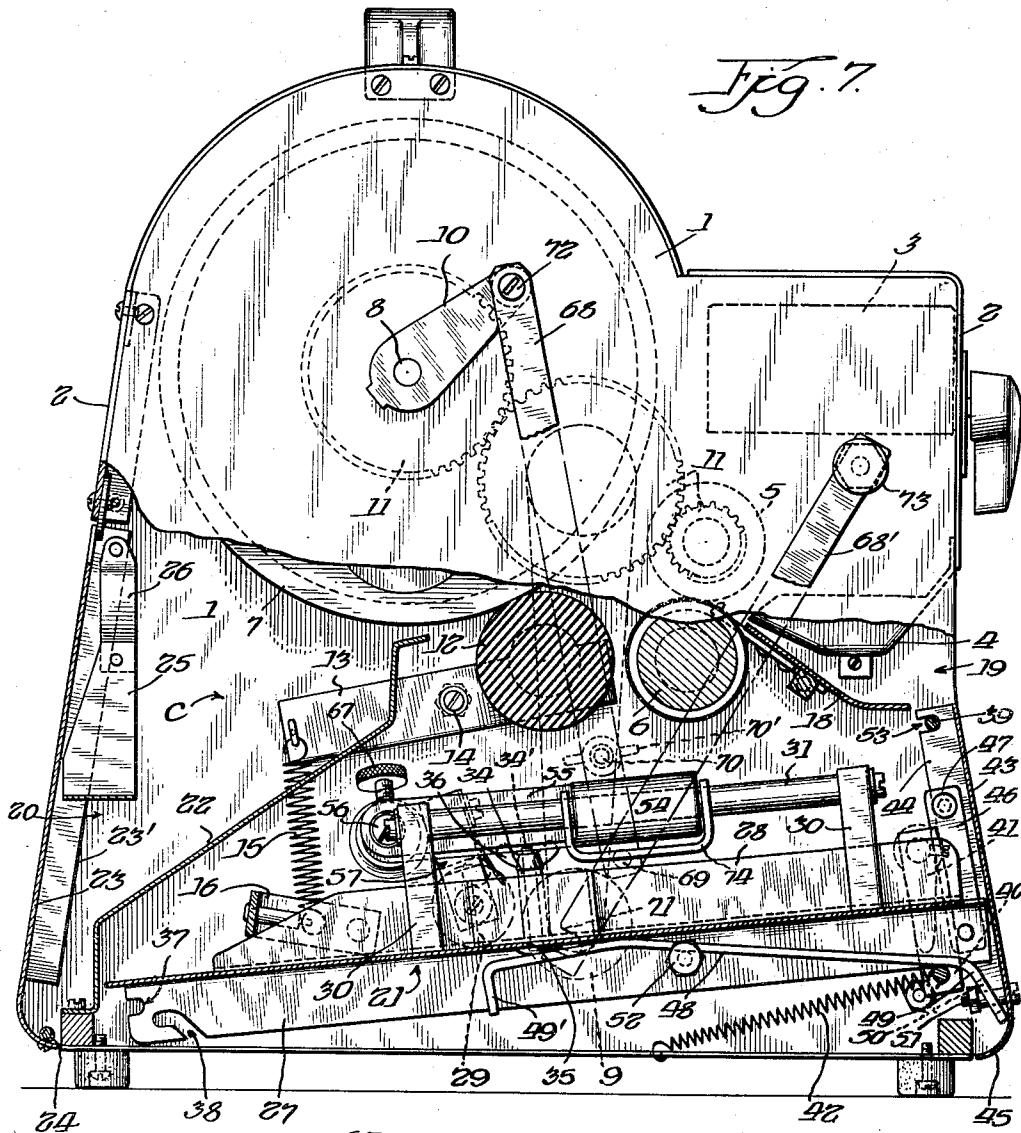
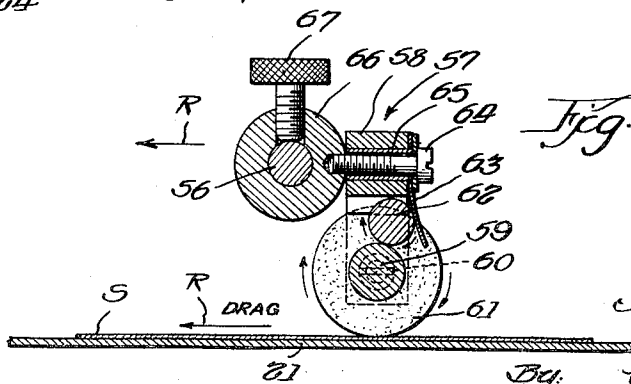
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2,558,046

DUPLICATING MACHINE FEED CONSTRUCTION

Filed Sept. 9, 1947

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,558,046

DUPLICATING MACHINE FEED
CONSTRUCTION

Arthur H. Geib, Milwaukee, Wis.

Application September 9, 1947, Serial No. 773,046

15 Claims. (Cl. 271-42)

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This invention relates to improvements in duplicating machines of the kind disclosed and claimed in my co-pending application for Letters Patent, Serial No. 721,628, filed January 11, 1947, having for an object to provide an improved and novel sheet receiving and feeding table and automatic feeding means, whereby sheets may be individually fed, in successive order, from the table into duplicating engagement with the machine master sheet carrying drum.

It is also an object of the invention to provide a sheet receiving and feeding table which may be easily and quickly moved to an extended and operative position with relation to the machine body in effectual sheet feeding relationship to the machine sheet receiving, moistening and duplicating mechanism, and when desired, removed from such position to one within the machine body where it will be satisfactorily housed and retained in compact and out-of-the-way position, conveniently and immediately available for future use.

Another object of the invention is to provide a sheet receiving and feeding table equipped with novel means for firmly supporting its outer and free end when said table is arranged in an operative position with respect to the machine body, and which, with stowing of the table in the machine body, will flushly engage in and with the open lower portion of the adjacent machine body wall and serve as an effectual closure therefor.

A further object of the invention is to provide a duplicating machine wherein the body or casing thereof is so constructed and designed as to effectually receive, support and house the duplicating mechanism assembly in such a manner as to afford a chamber immediately therebelow, into which the sheet receiving and feeding table and automatic feeding mechanism are stowed when not in use, and when it is desired to close the machine, as for transporting, etc.

The invention also aims to provide to a duplicating machine an advantageous form of automatically operable sheet feeding mechanism, by means of which, sheets stacked and properly positioned on the feed table will be individually and successively engaged and removed from the upper sides of the stock and delivered to the sheet engaging and moistening rolls of the duplicating assembly; said sheets being "wiped" or pulled from the stack upper side towards and to said rolls without folding, wrinkling or other malshaping.

Yet another object of the invention is to provide an automatic sheet feeding mechanism collectively operable with and from the machine

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rotary master drum, by means of a simple yet effectual motion converting and transmitting connection, and which, if desired, may be disconnected in order that the hand or manual feed of sheets from the table to the duplicating mechanism assembly can be effected.

Other objects of the invention are to provide the sheet receiving and feed table with means for causing its accurate operative alignment with the machine combined sheet receiving and guiding apron and gate immediately following its movement to a machine body extended position, thus, ensuring satisfactory feeding of sheets to the duplicating mechanism assembly; furthermore, to so mount the pressure roll of the duplicating mechanism assembly that with movement of said table to housed and inoperative position within the machine body, the pressure roll will be automatically removed from peripheral pressure contact with the master drum, and hence, ensure maintenance of its yieldable peripheral surface free from malshaping or like deterioration.

The foregoing, as well as other objects, advantages and meritorious teachings of my invention, will be in part obvious and in part pointed out in the following detailed disclosure thereof, when taken in conjunction with the accompanying drawings, it being understood that the form of the invention presented herein is precise and when is now considered to be the best mode of embodying its principles, but that modifications and changes may be made in specific embodiments without departing from its essential features.

In the drawings:

Figure 1 is a side elevation of a duplicating machine of the character hereinbefore indicated, equipped with my improved sheet receiving and feed table and automatic sheet feeding means, wherein said table is illustrated in an operative position and said feeding means is connected for operation.

Figure 2 is a fragmentary front end elevation of the equipped machine shown in Figure 1.

Figure 3 is a fragmental perspective of the sheet delivery or discharge end of the duplicating machine, with the sheet receiving tray in operative or open position; the adjustable stop bar being illustrated, in dotted lines, in another of its adjusted positions.

Figure 4 is a top plan view of the equipped machine, wherein the feed table, the automatic feeding means, and the sheet receiving tray are shown in operative positions.

Figure 5 is a vertical transverse section, taken

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on the line 5—5 of Figure 4, looking in the direction in which the arrows point.

Figure 6 is a vertical longitudinal section, taken on the line 6—6 of Figure 4, looking in the direction in which the arrows point.

Figure 7 is an enlarged side elevation, looking toward the crank arm and pitman provided side of the equipped machine, with the lower portion of the machine body broken away and parts appearing in section, showing its feed table stowing chamber and the feed table and automatic sheet feeding means received or stowed therein in operative positions, and

Figure 8 is an enlarged detail in transverse section of the sheet engaging roller of the sheet feeding means, its clutch device, and the feed means mounting, together with a portion of the sheet feeding table over which the engaging roller moves, and a single sheet supported thereon.

Referring in detail to the drawings, the invention is shown adapted to a duplicating machine of the type hereinbefore identified, which includes a box-like body or housing having end and side walls 1 and 2, respectively. Openings or ways are formed in and across the lower portions of each of the side walls and provide for access to and from (sheet ingress and egress ways) a chamber or compartment in the lower portion of the body, identified by the reference letter C, the purpose of which will be hereinafter more fully described.

The upper portion of the machine body supports and houses the duplicating mechanism assembly. Said assembly, generally, includes a horizontal liquid solvent tank or reservoir 3 having valved or other suitable communication with a fluid pan 4; pick-up and squeegee rollers (not shown) co-operably associated with the pan and each other; a sheet moistening roller 5; a moisture feed roller 6 parallel to and peripherally contacting the moistening roller 5; a master sheet receiving and carrying drum 7 mounted on a shaft 8 journaled in bearings in appropriate portions of the body end walls, having a crank lever 10 on one of its ends; gearing 11 for transmitting rotary motion from an operating crank handle 9 to said master drum 7 and the sheet moistening roller 5, from which it is frictionally transmitted to the peripherally and frictionally intercontacted roller 6 and the fluid pick-up and squeegee rollers, aforesaid.

A pressure roller 12, disposed in parallel relation to the periphery of the master drum 7, is journaled in certain of the ends of mounting bracket arms 13 which, in turn, are pivotally mounted intermediately of their respective ends, as at 14, adjacent the inner sides of appropriate portions of the body end walls 1. Contractile coiled springs 15 are connected to the remaining and rearward ends of the bracket arms 13 and to the opposite end portions of a U-shaped trip lever 16 arranged longitudinally and rearwardly of the chamber C area of the machine body and journaled, at its opposite ends, in adjacent portions of the body end walls 1. A finger piece or handle 17 is fixed to one end of the trip lever 16 and is arranged exteriorly of the machine body, in order that it may be conveniently engaged to effect pivotal movement of said lever whereby the coiled springs 15 can be tensioned or detensioned for moving the pressure roller into pressure peripheral contact with the master drum 7, or out of such contact.

An apron-like member or gate 18 is disposed longitudinally of the body and is pivotally

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mounted on its end walls 1 adjacent the forward side wall 2 in proximity to the sheet ingress way, herein indicated for convenience by the numeral 19. Said member 18 serves to direct individual sheets, in successive fashion, into engagement with the peripheral intercontacting rollers 5 and 6 and, as will be understood, provides means for effectually feeding sheets to the machine duplicating mechanism assembly from the sheet receiving and feeding table, hereinafter described.

As heretofore stated, the chamber C of the machine body has ingress and egress ways 19 and 20 formed in appropriate portions of the normally front and rear side walls 2, respectively, each of which extends throughout the length of its particular wall.

The purpose of the ingress way 19 is two-fold. It permits the feeding and passage of work sheets from the subsequently described feed table 21 into engagement with the machine duplicating mechanism assembly and, via its lower portion, sliding of the feed table into the chamber C for stowing therein; and conversely, its sliding removal therefrom for arrangement in an operative sheet feeding position.

The egress way 20 communicates with the lower portion of the master drum 7 and the pressure roller 12. Thus, as sheets are duplicated in and by the machine, they move downwardly and rearwardly from the master drum and pressure roller through said egress way with the duplicated matter thereon, exposed.

A downwardly inclined and immovable chute wall 22 is positioned in the rearward part of the chamber C. Obviously, it will serve to direct duplicated sheets received from the duplicating mechanism outwardly through the egress way 20; also, it transversely partitions the chamber C and limits the extent of stowing engagement of the feed table 21 therein.

The egress way 20 has a door 23 whose lower side is hinged, as at 24, to adjacent portions of the end walls 1. Right angularly disposed flanges or walls 23' are formed on the opposed sides of the door, whereby with its swinging to an open and substantially horizontal position (see Figures 1, 3 and 4) said flanges will prevent lateral displacement of work sheets successively delivered thereonto from the duplicating mechanism. A work sheet stop or check 25, comprising a U-shaped strip, has its opposite and angularly extended legs swingably connected to the free or outer ends of the flanges 23' by links 26. Because of this swingable connection, said stop may be optionally arranged in one of several relatively different positions; hence, rendering the same effectual for use in limiting the discharge movement of work sheets of different sizes received thereon from the machine duplicating mechanism (see Figures 3 and 4, including the dotted line showing of the former).

In order that work sheets may be effectually delivered or fed to the duplicating mechanism assembly, the table 21 is provided and is adapted to be operatively positioned adjacent the forward side wall 2 of the machine body. This table consists, preferably, of a rectangularly shaped flat sheet body having its opposite sides downwardly flanged, as at 27, for reinforcement and machine body connecting facility.

A work sheet guide wall 28 is fixedly mounted on the upper face of the table body in proximity and parallel to one side thereof and has an offset intermediate portion for receiving and retaining a yieldable work sheet edge engaging block 29.

Adjacent to and outwardly of the fixed wall 28 are anchored longitudinally disposed and relatively spaced posts 30 mounting the opposite ends of a cross-sectionally circular guide rod 31 in their upper ends, the purpose of which will be presently described.

Oppositely of and normally parallel to the fixed guide wall 28, a transversely adjustable guide wall 32 is received on the table body upper face. This wall has an outwardly offset seat 33 in and immediately of its opposite ends, to which an outwardly disposed upright sleeve 34 is fixed. A stud 34' is received by and through the sleeve, its lower and headed end being slidably engaged in a slot 35 formed in the feed table body and disposed transversely thereof to a point suitably spaced from the fixed guide wall 28, while its upper end is threaded for receiving a locknut 36. Accordingly, it will be understood that the guide wall 32 may be adjusted to pre-determined positions transversely of the feed table, toward or from the fixed guide wall 28, whereby to effectually receive stacked work sheets therebetween for feeding to the machine duplicating mechanism assembly.

A second yieldable work sheet edge engagement block 29' is received and retained in the seat 23 of the adjustable guide wall 32.

The flanged sides of the feed table body each have outwardly opening pockets 37 formed in their inner ends, and downwardly opening bayonet or like slots 38 in portions in proximity thereto. A horizontal rod 39 is mounted in the machine body end walls 1 across the upper portion of the ingress way 19 directly below and in proximity to the outer edge of the gate 18. Said rod, at times, is engaged in the pockets 37 and will then serve to horizontally and firmly support the feed table inner end with relation to the machine body and its sheet ingress way 19.

To engage the inner end of the feed table 21 and its flanged sides 27 with the supporting rod 39, as when said table is arranged in the operative position shown in Figure 1 of the drawings, a U-shaped bracket assembly 40 is rotatably mounted, at its opposite ends, in and between the machine body end walls 1 and extends horizontally across the ingress way 19 with its intermediate body portion in parallel relation to said horizontal supporting rod 39. A finger engaging and actuating piece 41 is fixed to one of the rotatably mounted ends of the bracket assembly 40, exteriorly of the machine body. By engaging and turning the same, the bracket, and particularly, its intermediate body portion, will be swung outwardly and upwardly in an orbital path of travel from an inoperative position, as shown in Figure 7 of the drawings, to an operative or supporting position, such as shown in Figure 1. Therefore, it will be seen that if and when the feed table 21 is pulled or slid outwardly from a stowed position in the machine body chamber C (see Figure 7) the downwardly opening bayonet slots 38 in the table flanged sides 27 will receive adjacent portions of the horizontal body portion of the bracket assembly 40 therein. Then, by engaging the finger piece 41 and turning it in the proper direction, said assembly and the engaged table end will be swung outwardly and upwardly with relation to the machine body ingress way 19, causing the inner ends of the flanged table sides 27, with their pockets 37, to be supportingly engaged with and about the horizontal supporting rod 39. At this time, the inner end of the feed table 21 will be effectually positioned in operative

relation to the work sheet receiving and controlling gate 18, whereby sheets may be properly fed to the duplicating mechanism.

To normally retain the U-shaped bracket assembly 40 in that position shown in Figure 7 of the drawings, I may and preferably do connect one end of a contractile coiled spring 42 to an appropriate portion of said assembly, and its opposite end to a fixed portion of the machine body, i. e., a portion of a bottom flange on one of the end walls 1. By the same token, it will be understood that as and when the bracket assembly 40 is swung outwardly and upwardly, the spring 42 will be placed under tension. In consequence, when said bracket assembly 40 is in its uppermost position, i. e., a position where the feed table 21 will be positioned, as shown in Figure 1 of the drawings, the tensioned spring 42 will thereupon function to move the inner end of the feed table inwardly into engagement with the horizontal supporting rod 39 and there movably retain the same under adequate pressure.

In order that the free end of the feed table 21 will be firmly supported when it is moved to a horizontal distended and operative position with relation to the machine body (see Figure 1) a panel 43 of rectangular formation having inwardly flanged opposite ends 44 and an inwardly disposed and cross-sectionally curved lower side 45, is provided. The length of said panel is such that it shall have, at times, snug reception in the sheet ingress way 19. Its width or depth, preferably, is such that when engaged in the ingress way, as shown in Figure 7 of the drawings, its upper side will be substantially level with the adjacent and outer side of the gate 18.

The panel 43 is swingably connected, by links 46, to outer end portions of the table side flanges 27, said links being also pivoted, at 47, to intermediate portions of the flanges 44. Thus, when the panel 43 is in an inoperative position, as shown in Figure 7 of the drawings, the links 46 will have been swung to their lower positions in substantial parallelism to the panel, and the feed table 21 will be supported in a plane which will afford clearance to work sheet feeding mechanism (hereinafter described) received thereby, permitting free or unimpeded sliding of the feed table to a stowed position in the chamber C, or an operative position (see Figure 1).

A bracing-stay arm 48, having its normally outer end angularly bent, as at 49, and formed with a bearing opening 50, loosely receiving therethrough a shank or stud 51 fixed to the panel 43 in proximity to one end of its curved lower side 45, serves to limit outward swinging of said panel to the extent and for the purpose clearly shown in Figure 1. The inner end of this arm is hooked or similarly provided, as at 49', whereby with downward and outward swinging of the panel, it abuttingly engages with a fixed stud 52 on the inner side and intermediate portion of the near feed table flange 27. Consequently, positioning of the panel 43 with relation to the outer and extended end of the feed table, whereby to ensure its firm and positive support, will be assured.

Effectual engagement of the panel 43 in the aforesaid portion of the ingress way 19 of the chamber C, when the former is in its closed position, is materially aided by forming inwardly and marginally opening complementary recesses 53 in upper end portions of the panel flanges 44. These recesses, with closing of said panel, snugly though removably receive adjacent portions of

the supporting rod 39 therein. Thereby, pendant support is provided the forward end of the chamber C stowed feed table. Moreover, abutting engagement of the marginal portion of the curved lower side of the panel with the near edges or ends of the inwardly flanged lower sides of the end walls 1 will be ensured.

Automatic work sheet feeding means are received and supported on the feed table 21. The same include a sleeve bracket 54 slidably mounted on the guide rod 31, having an inwardly extending longitudinally disposed arm 55 fixed to or integral therewith. The free and inner end of the arm receives and rigidly supports a laterally extending rod 56 adapted, at times, to transversely overlie the work sheet feed table 21 (see Figure 4) for an appropriate distance.

To engage and successively remove the uppermost of stacked work sheets, such as the one shown and identified in Figure 8 of the drawings by the letter S, I provide a work sheet engaging and pulling device, generally indicated by the numeral 57. Said device comprises an inverted U-shaped bracket 58 having a shaft 59 rotatably mounted between its opposite sides by means of screws 60. Rollers 61, of rubber or other suitable material, are fixedly mounted on the shaft 59 in spaced relation and, as shown, are adapted to have peripheral contact with work sheets, such as that designated at S. Loosely positioned between the body or head portion of the bracket 58 and an intermediate portion of the shaft 59, inwardly and laterally of its vertical axis, is a clutch roller 62. As shown, said clutch roller has peripheral engagement with adjacent surfaces of the bracket head and shaft. Outward displacement of the clutch roller is prevented by the overlying portion of a spring finger 63 connected to the adjacent side of said bracket head by a screw-threaded bearing pin or screw 64 received in and through a bushing sleeve 65 having its inner end engaged in an adjacent portion of a sleeve 66 slidably mounted on the laterally extending rod 56 and, obviously, adjustable longitudinally therealong. A set or locking screw 67 is turned through the slidably mounted sleeve 66 into binding engagement with the particularly adjacent portion of the rod 56, and so, secures it and the work sheet engaging and pulling device 57 in a selectively adjusted position.

As hereinafter more fully described, the work sheet device 57 has reciprocal traversing movement over the feed table 21 and the work sheets S received and retained thereon. When said device is moved outwardly with respect to the feed table, it is evident that the rubber rollers 61 will be permitted to rotate in the direction indicated by the associated arrows in Figure 8 of the drawings. However, when moved in an opposite direction (see the arrow R) over the feed table, peripheral contact of the rollers 61 with a sheet S will tend to cause their rotation in a reverse direction. This partial reverse rotation of the rollers, along with the shaft 59 contacting the clutch roller 62, will cause the latter to immediately bindingly engage or clutch the adjacent portions of the head of the bracket 58 and the shaft 59, and hence, prevent further rotation of the latter. Therefore, the shaft carried rubber roller 61 will impart a drag to the surface engaged work sheet S and wipingly pull it toward and into the sheet ingress opening 19 onto the pivotal gate 18, for introduction into engagement with and by the machine duplicating mechanism assembly.

Reciprocal motion is automatically transmitted to the work sheet engaging and pulling device 57, when the feed table is positioned in the manner shown in Figures 1 and 4, by means of a connecting rod or bar comprising sections 68 and 68' whose adjacent ends are pivotally connected, as at 69, and with arrangement in relative parallelism, are detachably locked by engaging the shank of a bolt 70 on a portion of the section 68 in a marginally opening pocket 71 in an adjacent portion of the section 68'; thereupon, turning a locking nut 70' onto the bolt shank and into engagement with said section 68'. One end of the connecting rod 68-68' is pivoted to the outer end of the crank lever 10, at 72. Its remaining end is detachably pivoted, at 73, to a U-shaped bracket 74 pivotally and slidably mounted on the guide rod 31 and embracing the body of the sleeve bracket 54, also, slidable on said rod (note Figures 1, 2, 4 and 7).

Thus, with rotation of the master drum 7 and crank lever 10 from the gearing 11, such motion will be translated to reciprocal by the connecting rod 68-68', and so, transmitted to the sheet engaging and pulling device 57.

By disengaging the connection 73 from the bracket 74 and loosening the lock nut 70', the sectional connecting rod 68-68' may be inoperatively positioned on the machine by then engaging said connection 73 in a suitable screw-threaded opening formed in an appropriate portion of the near end wall 1, in the manner shown in Fig. 7 of the drawings. With such an arrangement of the connecting rod, the sheet engaging and pulling device 57 will not be reciprocally affected by rotation of the crank lever 10.

At this point, it may be noted that by reason of the character of mounting of the sleeve bracket 54 on the guide rod 31, the device 57 may be swung upwardly and outwardly to a completely inoperative position with relation to the feed table 21. Thereby, placement and proper relative arranging of work sheets on the feed table may be conveniently and satisfactorily effected.

Operational use of my improved duplicating machine may be reviewed, as follows:

Assuming that the machine is in its closed or inoperative position, as shown in Figure 7 of the drawings, to set it into operative position the panel 43 is engaged and swung outwardly and downwardly with relation to the sheet ingress way 19 and the feed table 21 to that position shown in Figure 1 of the drawings. Thereupon, the feed table 21 is drawn or slid longitudinally outwardly from the chamber C of the machine body through the lower portion of the ingress way 19. As it is thus moved, the lower edges of the feed table side flanges 27 slide over the body portion of the rotatably or pivotally mounted bracket assembly 40 until the bayonet slots 38 in the said flanges receive said body portion therein. At this time, the finger engaging and actuating piece 41, connected to one end of the bracket assembly 40, is turned in a direction to pivot the same outwardly against the tension of the contractile coiled spring 42. The bracket assembly 40, through the engaging piece 41, is now swung upwardly to the position shown in Figure 1 and will be removably so retained by action of the tensioned contractile spring 42 thereon. In such position, the inner ends of the feed table side flanges 27 will be adjacent though somewhat below the outer end of the gate 18 while the feed table itself, will be substantially flush therewith.

This relationship is maintained by engagement of the supporting rod 39 in the pockets 37 in the adjacent ends of said flanges 27.

The panel 43 will be retained, with relation to the outer end of the feed table 21, in the manner shown in Figure 1 of the drawings, the bracing-stay arm 48 so retaining the same.

Following satisfactory transverse adjustment of the adjustable guide wall 32 on the feed table 21, the sleeve 54 is rotated on the guide rod 31 in a manner to permit downward and inward swinging of the laterally extending rod 56 on which the sheet engaging and pulling device 57 is mounted. Said device 57 is adjusted to the particularly desired position on the rod 56 and is secured in a substantially perpendicular position thereon (see Figure 8) by turning the screw 67 to a locking position.

The sectional connecting rod 68—68' now has its sections swung into parallelism and locked through the bolt and lock nut connection 70—70'. The free end of the section 68' is pivotally connected to the U-shaped bracket 74 slidable on the guide rod 31 through the connecting device or screw 73. The egress way door 20 is swung outwardly and downwardly to the position shown in Figures 1 and 4 and the work sheet stop or check 25 is appropriately positioned.

With rotation of the master drum 7, reciprocal motion is transmitted to the sheet engaging and pulling device 57 through the connecting rods 68—68'. As this device moves outwardly of the feed table 21, on which suitable work sheets S have been arranged, the roller 61 will roll thereover. However, on its return movement in an opposite direction, the clutch roller 62 will function to prevent reverse rotation of said rollers 61 so that as they are moved over the surface of an uppermost or adjacent sheet S, they will frictionally engage and pull the same toward and into or through the ingress way 19 onto the pivotally mounted gate 18 for introduction into duplicating engagement with the machine duplicating mechanism assembly.

Obviously, sheets passing through the machine duplicating assembly are delivered from the master drum 7, rearwardly of the pressure roller 12 and dropped onto the chute wall 22 from whence, they will move downwardly and outwardly onto the tray-like receptacle provided by the now opened door 23.

To return the machine to its inoperative or closed position, the panel 43, obviously, need only be moved inwardly and upwardly with relation to the outer and adjacent end of the feed table 21, whereupon it will assume a position, with relation to said feed table 21, as indicated in Figure 7 of the accompanying drawing. Thereupon, the feed table 21 is pulled slightly outwardly and downwardly to that position also shown in said Figure 7 of the drawings. At this time, the feed table has an inward thrust imparted thereto which will move it into the stowing portion of the machine body chamber C; the extent of its inward movement thereinto, of course, being limited by the lower portion of the chute wall 22.

If a machine operator shall neglect to peripherally disengage the pressure roller 12 from the master drum 7, this will be automatically effected as the feed table 21 is moved into the machine body chamber C, in that the inner end of said feed table will engage the now downwardly swung trip lever 16 and swing it rearwardly and upwardly under urge of the tensioned contractile

springs 15, hereinbefore described. In consequence, the pressure roller on the pivotally mounted bracket arms 13 will be moved out of peripheral contact with the master drum 7.

The ingress opening 19 will have its lower portion effectually closed by the panel 43 now engaged therein, while the egress way of the machine body, of course, will be fully closed by swinging the door 23 upwardly to the position shown in Figure 7 of the drawings.

Prior to sliding movement of the feed table 21 into the chamber C of the machine body, it will be understood that in addition to disconnecting the sectional connecting rod 68—68', the sheet engaging and pulling device 57 is rotated or pivoted to an inclined or canted position, such as indicated in Figure 7; this being accomplished by disengaging the locking screw 67 from the transverse rod 56 and rotating the device mounting sleeve 66 thereon to the particularly desired position. Thereupon, the feed table with the pulling device 57 may be freely slid or moved into the chamber C of the machine body.

I claim:

1. A duplicating machine, including a housing having sheet ingress and egress ways therein, duplicating mechanism supported in the housing, said housing having a chamber therein, a sheet feed table stowable, at times, in said chamber independently of said duplicating mechanism and removable, at times, from said chamber to a position relative to the housing communicating with said ingress way and said duplicating mechanism, a panel adjacent the normally outer end of said feed table receivable, at times, in a portion of said ingress way to close said chamber, means swingably connecting said panel to said normally outer end of the feed table whereby the panel may be swung to a position relative to the normally outer end of the feed table for supporting the same, and means mounted on the casing and in said chamber engageable with a portion of the feed table for moving the same upwardly to a position whereby its normally inner end is arranged in communication with said duplicating mechanism.

2. A duplicating machine, including a housing having a chamber therein apart from the machine duplicating means, one end of said chamber being open, a feed table stowable in said chamber via its open end, a panel adjacent the normally outer end of the feed table, links pivotally connected at certain of their ends to intermediate portions of the opposite sides of said panel and at their remaining ends to adjacent end portions of the opposite sides of the feed table, said panel with stowing of the feed table in the housing chamber being engaged in and closing the chamber open end and overlying the outer end of the feed table, and with removal of said feed table from said chamber into juxtaposed relation to the housing open end, being swung downwardly and disposed below and supporting said outer end of the feed table, and means connected to the panel slidably engaging a portion of said feed table for limiting the extent of swinging movement thereof with relation to the feed table.

3. A duplicating machine, including a housing having a chamber therein apart from the machine duplicating means, one end of said chamber being open, a feed table stowable in said chamber via its open end, a panel swingably connected to the normally outer end of the feed table, said panel, with stowing of the feed table in the housing chamber being engaged in and closing

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the chamber open end and overlying the outer end of the feed table in substantially right-angular relation thereto, and with removal of said feed table from said chamber into endwise juxtaposed relation to the housing open end, being support-
 5 ingly disposed below the outer end of said feed table in angular relation thereto, and means connected to the panel slidably engaging a portion of the feed table movably retaining said panel in supporting relation to the feed table outer end.

4. A duplicating machine, including a housing having a sheet ingress way therein and a chamber therein apart from the machine duplicating means and the ingress way, one end of said chamber being open, a feed table stowable in said chamber via its open end, a panel swingably connected to the normally outer end of the feed table, said panel, with stowing of the feed table in the housing chamber, being engaged in and closing the chamber open end and overlying the outer end of the feed table in substantially right-angular relation thereto, and with removal of said feed table from said chamber into endwise juxtaposed relation to the housing open end, being support-
 15 ingly disposed below the outer end of said feed table in angular relation thereto, means connected to the panel slidably engaging a portion of the feed table movably retaining said panel in supporting relation to the feed table outer end, and a U-shaped bracket assembly rotatably supported in the housing in proximity to its open end, rotatable from without the housing, slidably receiving the feed table thereon, and in one rotated position, supporting the normally inner end of said feed table in substantially horizontal alignment with the sheet ingress way.

5. In combination with a duplicating machine including a housing having a sheet ingress way therein, a drum rotatably mounted in the housing and a feed table communicating with the ingress way; a swingable bracket reciprocally mounted on a portion of the feed table for movement longitudinally thereof, sheet engaging and feeding means carried by said bracket adjustable thereon transversely of the upper side of said feed table, a crank lever connected to one end of said drum, a sectional rod, means interconnecting the adjacent ends of the sections of said rod operable to lock the same in extended substantially co-linear relation, one end of the rod being pivotally connected to said crank lever, and means connecting the remaining end of the rod to said swingable bracket for transmitting reciprocal motion thereto without interference with the swingability thereof.

6. In combination with a duplicating machine including a housing having a sheet ingress way therein, a drum rotatably mounted in the housing and a feed table communicating with the ingress way; a swingable bracket reciprocally mounted on a portion of the feed table for movement longitudinally thereof, sheet engaging and feeding means adjustably carried by said bracket, a crank lever connected to one end of said drum outwardly of said housing, a rod comprising pivotally interconnected sections, means on the pivotal interconnection of the rod sections for releasably locking them in extended substantially co-linear relation, one end of the rod being pivotally connected to said crank lever, and means connecting the remaining end of the rod to said swingable bracket for transmitting reciprocal motion thereto without interfering with the swingability thereof.

7. In combination with a duplicating machine

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including a housing having a sheet ingress way therein, a drum rotatably mounted in the housing, and a feed table communicating with the ingress way; a swingable bracket slidably supported on a portion of the feed table for movement longitudinally thereof, sheet engaging and feeding means carried by the bracket adjustable thereon transversely of the upper side of said feed table, a crank lever connected to and rotatable with said drum, a connecting rod comprising pivotally interconnected sections, means on the pivotal interconnection of the connecting rod sections for locking them, at times, in extended substantially co-linear relation, one end of the connecting rod being pivotally connected to said crank lever, and means connecting the remaining end of the connecting rod to said swingable bracket for transmitting sliding movement thereto without interference with the swingability thereof.

8. In combination with a duplicating machine including a housing having a sheet ingress way therein, a drum rotatably mounted in the housing, and a feed table communicating with the ingress way; a longitudinally disposed guide rod immovably mounted on a portion of said feed table in substantially spaced parallel relation to its upper side, a bracket slidable and rotatable on the guide rod, sheet engaging and feeding means carried by the bracket adjustable transversely of the upper side of said feed table, a crank lever connected to one end of said drum, a rod comprising pivotally interconnected sections, means on the pivotal interconnection of the rod sections for releasably locking them in extended substantially co-linear relation, one end of the rod being pivotally connected to said crank lever, and means connecting the remaining end of the rod to said bracket for transmitting sliding movement thereto without interference with the swingability thereof.

9. In combination with a duplicating machine including a housing having a sheet ingress way therein, a rotatable drum mounted in the housing, and a feed table communicating with the ingress way; a longitudinally disposed guide rod immovably mounted on a portion of said feed table in substantially spaced parallel relation to its upper side, a bracket slidable and rotatable on the guide rod, sheet engaging and feeding means carried by the bracket adjustable transversely of the upper side of said feed table, a crank lever connected to one end of said drum, a sectional rod, means interconnecting the adjacent ends of the sections of said rod, operable to lock the same in extended substantially co-linear relation, one end of the sectional rod being pivotally connected to said crank lever, and means connecting the remaining end of the sectional rod to said bracket for transmitting sliding movement thereto without interference with the swingability thereof.

10. In combination with a duplicating machine including a housing having a sheet ingress way therein, a rotatable drum mounted in the housing, and a feed table communicating with the ingress way; a longitudinally disposed guide rod immovably mounted on a portion of said feed table in substantially spaced parallel relation to its upper side, a bracket slidable and rotatable on the guide rod, a second bracket slidably engaging the guide rod movably engaging the first mentioned bracket, sheet engaging and feeding means carried by said first mentioned bracket adjustable transversely of the upper side of said feed

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table, a crank lever connected to one end of said drum, a sectional rod, means interconnecting the adjacent ends of the sections of said rod operable to lock the same in extended substantially co-linear relation, one end of the sectional rod being pivotally connected to said crank lever and the remaining end of said sectional rod being pivotally connected to said second mentioned bracket.

11. In combination with a duplicating machine including a housing having a sheet ingress way therein, a rotatable drum mounted in the housing, and a feed table communicating with the ingress way; a longitudinally disposed guide rod immovably mounted on a portion of said feed table in spaced substantially parallel relation to its upper side, a bracket slidable and rotatable on the guide rod, a second and substantially U-shaped bracket having its opposite sides slidably engaging said guide rod embracing and movably bearing on adjacent portions of the first mentioned bracket, sheet engaging and feeding means carried by said first mentioned bracket adjustable transversely of the upper side of said feed table, a crank lever connected to one end of said drum, a sectional rod, means interconnecting the adjacent ends of the sections of said rod operable to lock the same in substantially co-linear relation, one end of the sectional rod being pivotally connected to said crank lever and the remaining end of said sectional rod being pivotally connected to said U-shaped bracket.

12. In combination with a duplicating machine including a housing having a sheet ingress way therein, a rotatable drum mounted in the housing, and a feed table stowable in the housing and movable therefrom to a position adjacent and communicating with the housing ingress way; a swingable bracket reciprocally mounted on a portion of the feed table for movement longitudinally thereof, sheet engaging and feeding means carried by said bracket adjustable thereon transversely of the upper side of said feed table, a crank lever connected to one end of said drum, a sectional rod, means interconnecting the adjacent ends of the sections of said rod operable to lock the same in extended substantially co-linear relation, one end of the rod being pivotally connected to said crank lever, and means detachably pivotally connecting the remaining end of said rod to said bracket for transmitting sliding movement thereto without interference with the swingability thereof.

13. A work sheet feed table for duplicating machines, comprising a substantially rectangularly shaped flat surface body, means on one end of said table for facilitating its detachable and supporting connection to a portion of the duplicating machine, a bracket arm slidably mounted on the normally upper side of said table movably longitudinally of the same, work sheet engaging and feed means carried by said bracket arm and adjustable laterally with relation thereto, said work sheet engaging and feed means being longitudinally movable over the normally upper side of said sheet feed table, a panel of a length substantially corresponding to the width of the table,

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links of lengths less than the width of the panel pivoted at certain of their ends to intermediate portions of the opposite ends of said panel and at their remaining ends to the remaining end of said table, said panel being adjustable to different positions with relation to the table, one of said positions being adjacent to and covering said remaining end of the table, and the other thereof being below the remaining end of the table and in supporting relation thereto through said links.

14. A work sheet feed table for duplicating machines, comprising a substantially flat surface body, means on one end of said table for facilitating its supporting connection to a portion of the duplicating machine, a panel of a length substantially corresponding to the width of the table, links of lengths less than the width of the panel pivoted at certain of their ends to intermediate portions of the opposite ends of said panel and at their remaining ends to the remaining end of said table, said panel being adjustable to different positions with relation to the table, one of said positions being adjacent to and covering said remaining end of the table, and the other thereof being below the remaining end of the table and in supporting relation thereto through said links.

15. A duplicating machine, including a housing having a stowing chamber therein one end of which is open, a feed table, means on one end of said table for facilitating its supporting connection to a portion of the duplicating machine housing in proximity to the open end of said stowing chamber, a panel of a length substantially corresponding to the width of the table, links of lengths less than the width of the panel pivoted at certain of their ends to intermediate portions of the opposite ends of said panel and at their remaining ends to the remaining end of said table, said panel being adjustable to different positions with relation to the table, one of said positions being adjacent to and over said remaining end of the table and in and closing the open end of said chamber, and the other of said positions being below the remaining end of the table and in supporting relation thereto through said links.

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