May 6, 1941. N. E. TRUITT ET AL 2,241,168

SHEET DISTRIBUTING MECHANISM

Filed April 10, 1939 5 Sheets-Sheet 1

Fig. 1

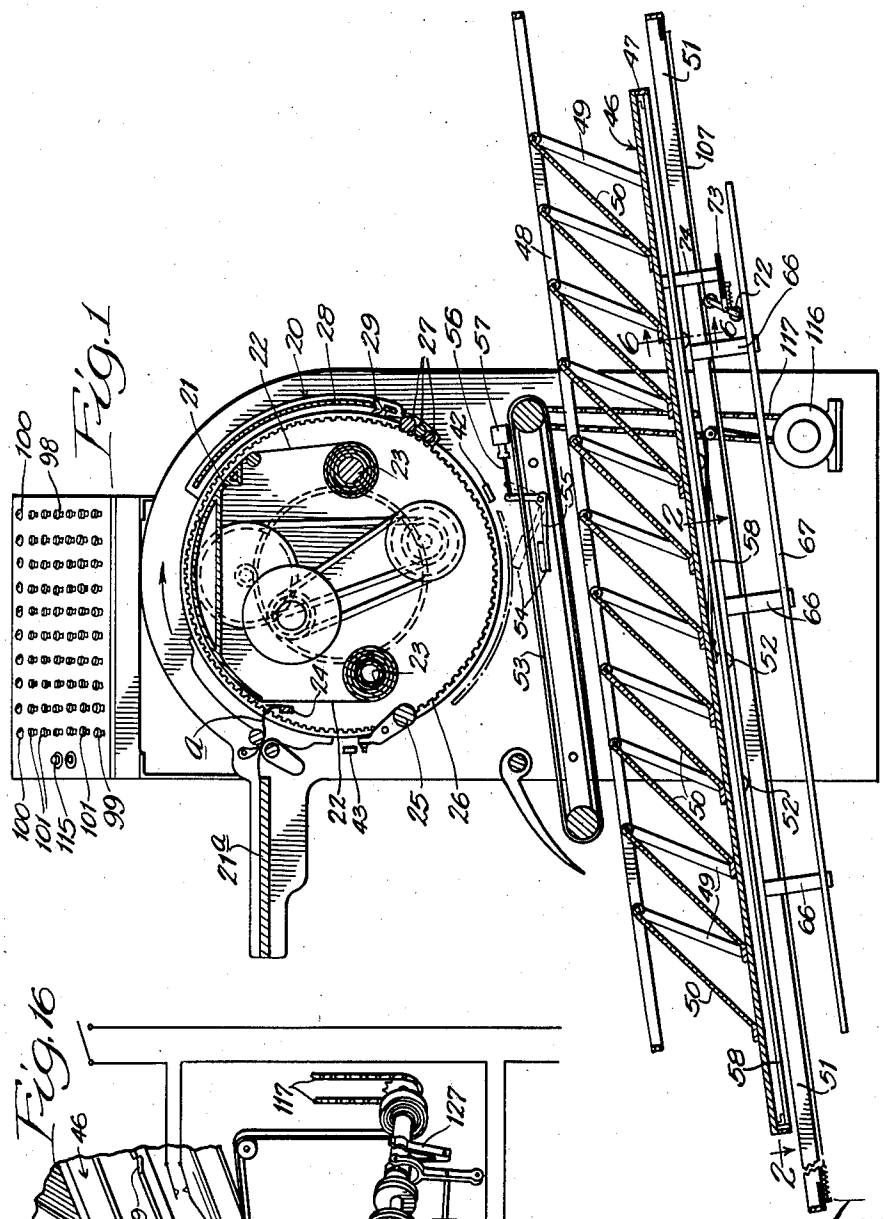
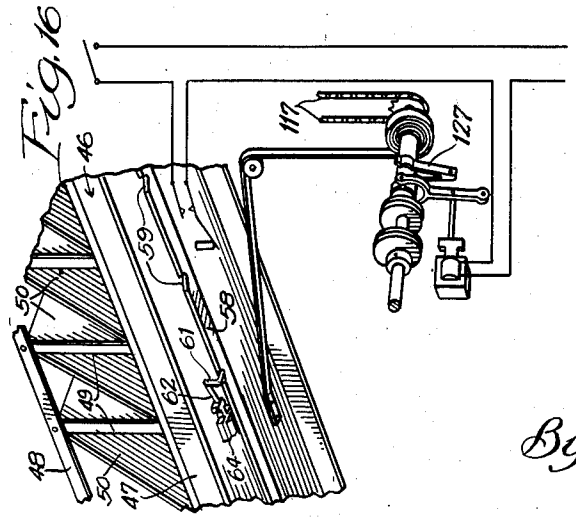


Fig. 16



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SHEET DISTRIBUTING MECHANISM

Filed April 10, 1939 5 Sheets-Sheet 2

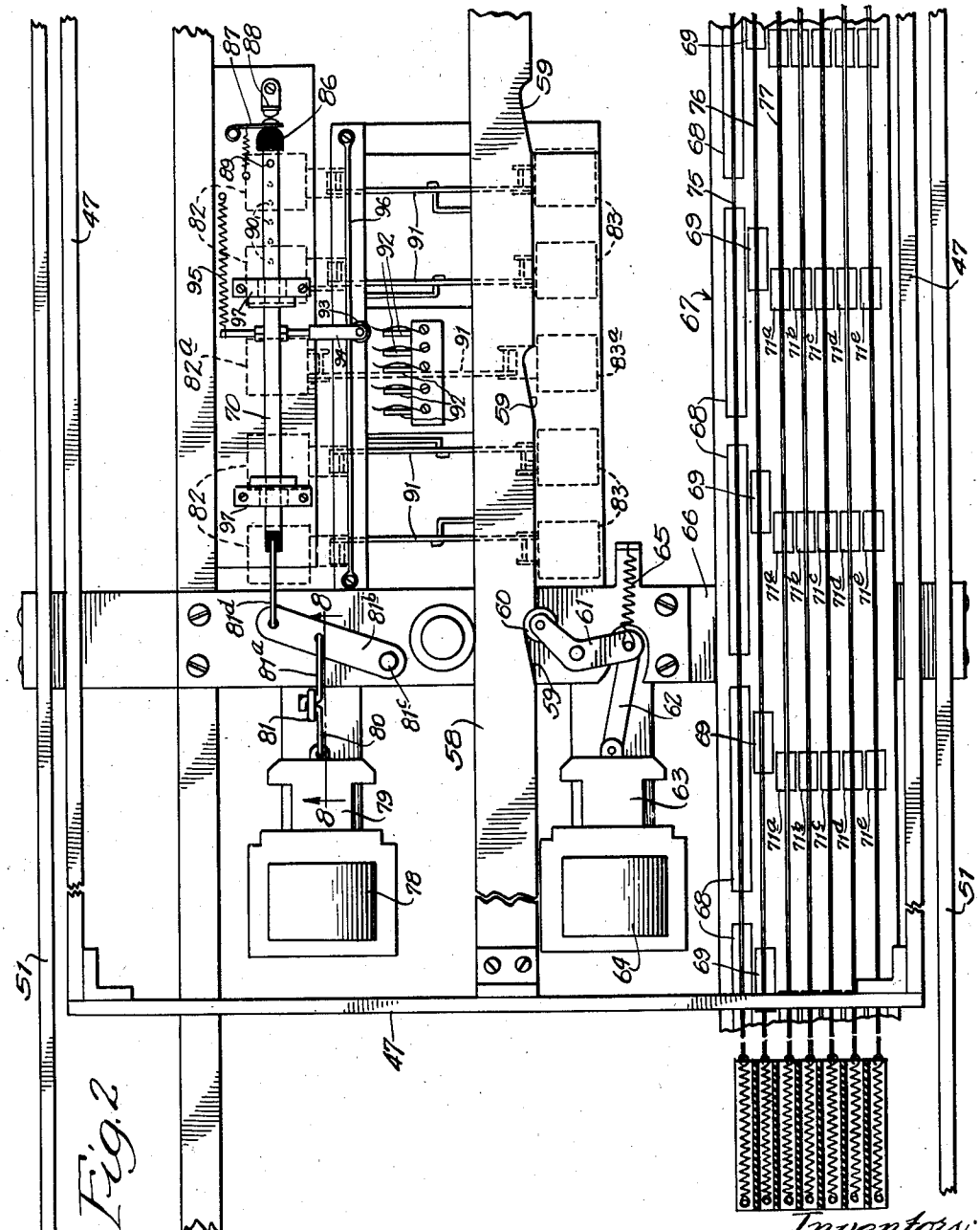


Fig. 2

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SHEET DISTRIBUTING MECHANISM

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Fig. 3

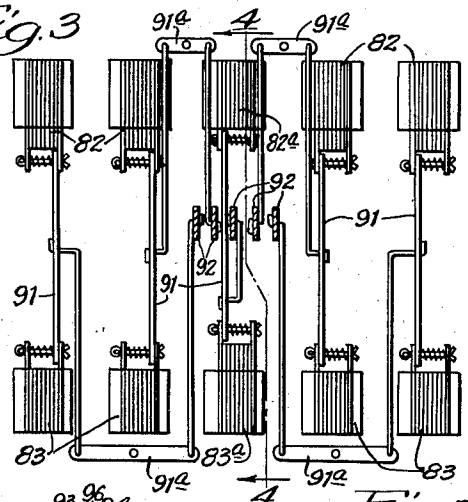


Fig. 4

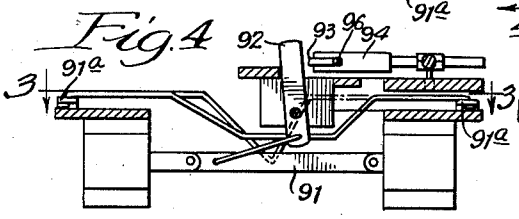


Fig. 5

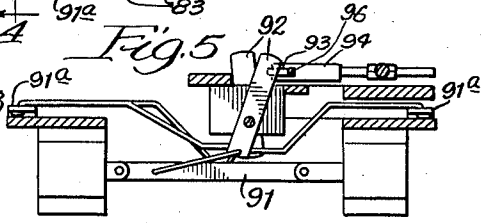


Fig. 6

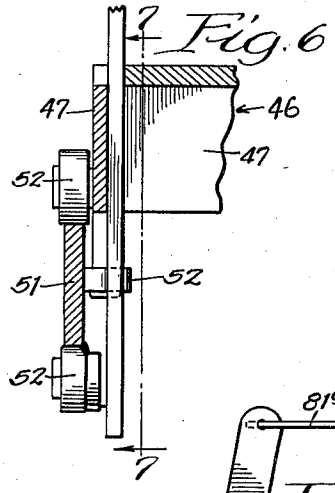


Fig. 7

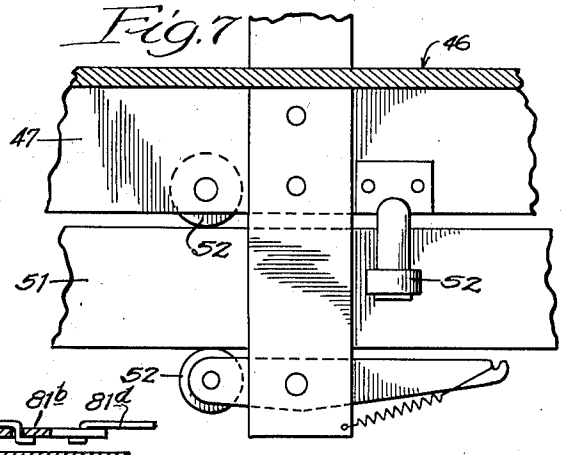
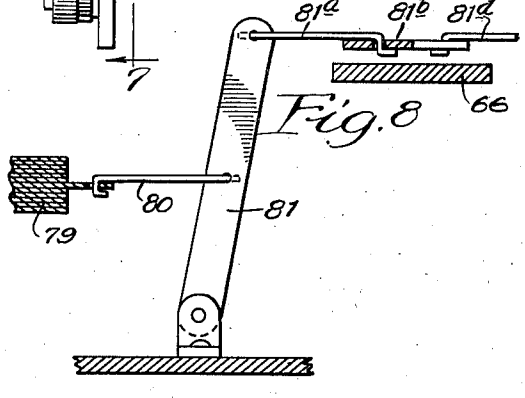


Fig. 8



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SHEET DISTRIBUTING MECHANISM

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Fig. 9

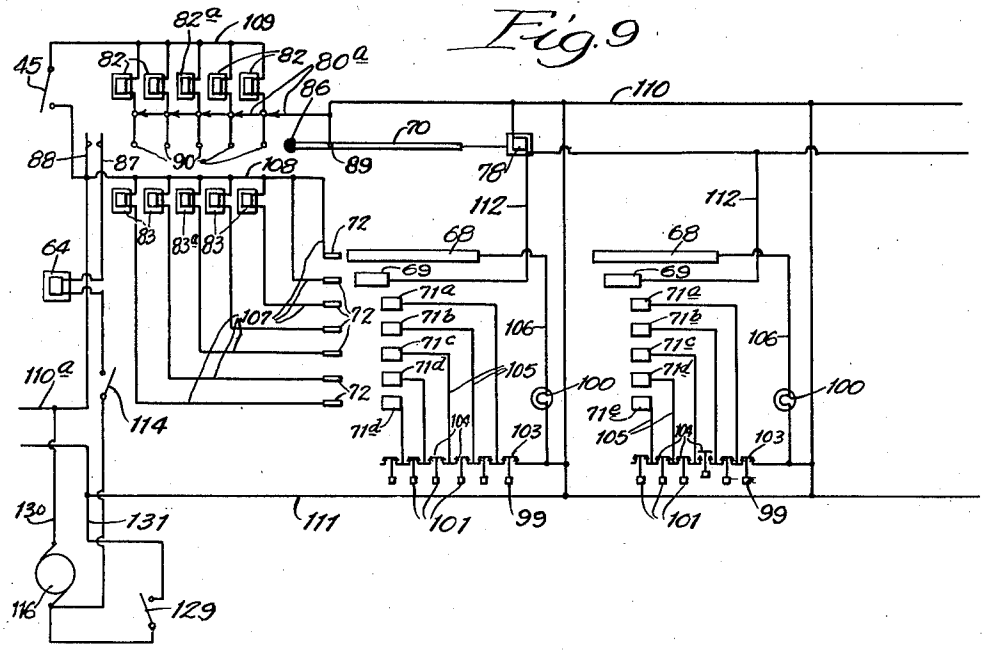


Fig. 10

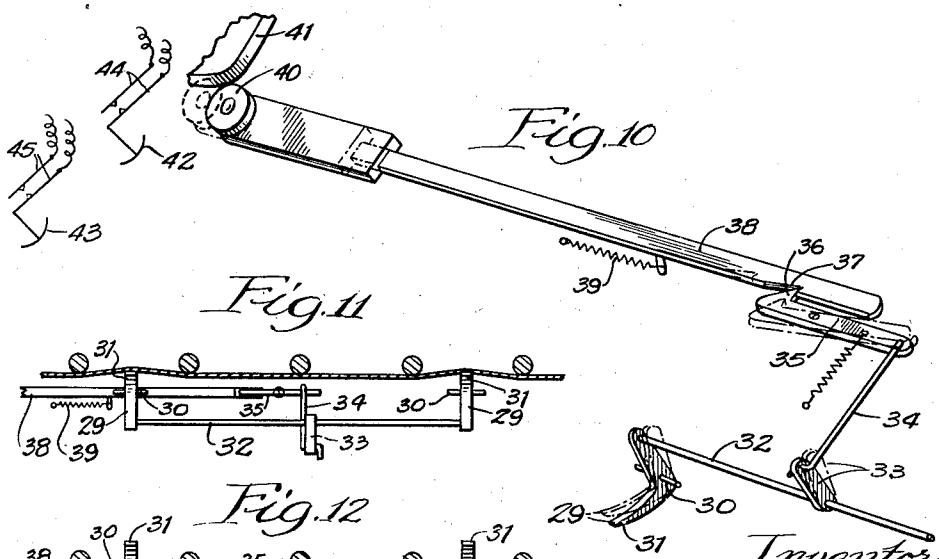
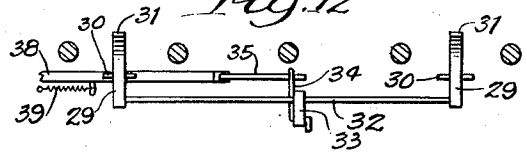


Fig. 11

Fig. 12



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SHEET DISTRIBUTING MECHANISM

Filed April 10, 1939 5 Sheets-Sheet 5

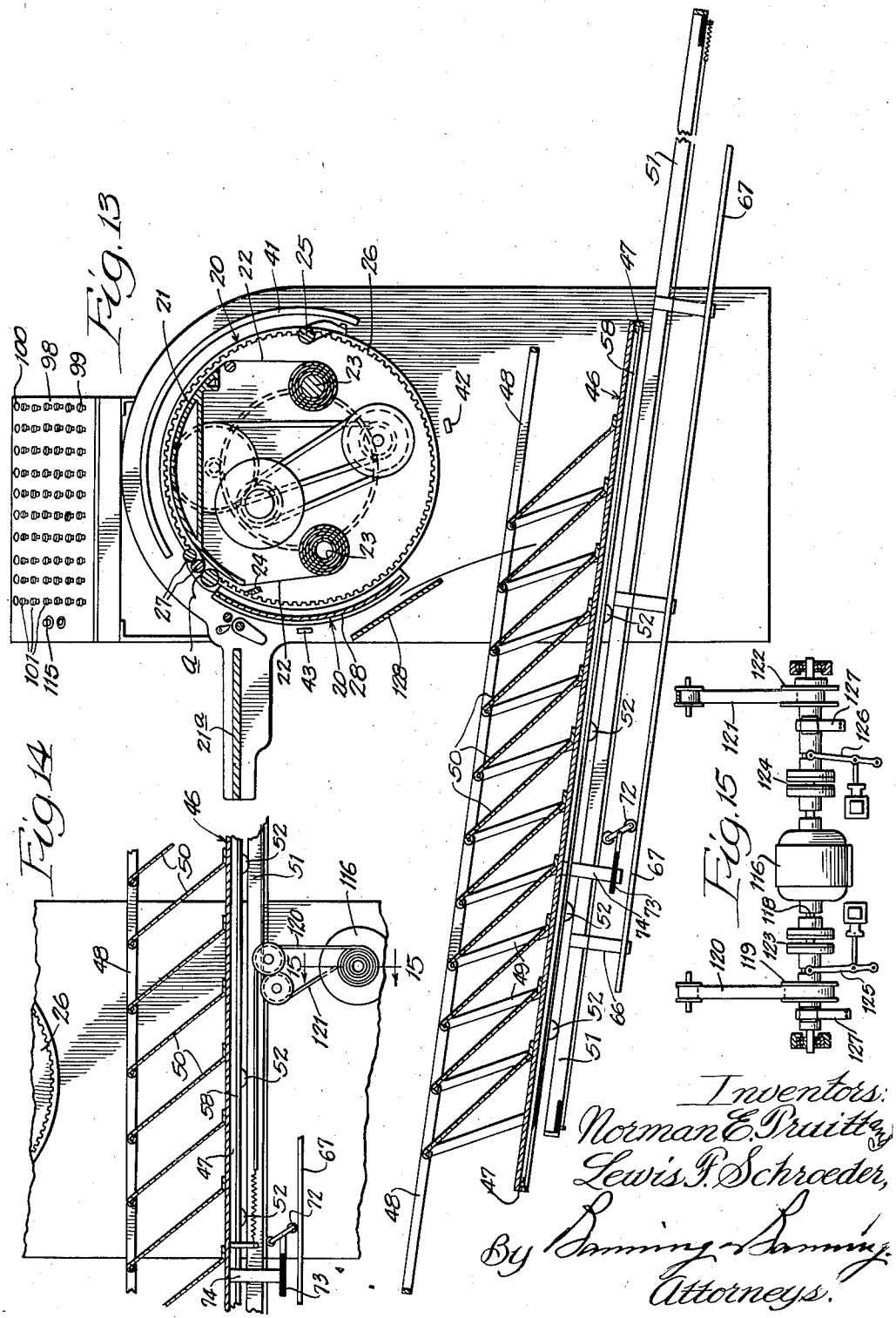


Fig. 13

Fig. 14

Fig. 15

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Patented May 6, 1941

2,241,168

UNITED STATES PATENT OFFICE

2,241,168

SHEET DISTRIBUTING MECHANISM

Norman E. Truitt and Lewis F. Schroeder, Chicago, Ill., assignors to Autocopy, Inc., Chicago, Ill., a corporation of Illinois

Application April 10, 1939, Serial No. 267,120

17 Claims. (Cl. 271—64)

This invention is designed primarily for use in connection with a rotary duplicating machine of the character set forth in Patent No. 1,979,285, issued November 6, 1934, although the principles involved are applicable to the distribution of sheets or the like delivered from various types of mechanisms.

As applied to a rotary duplicating machine, the invention makes provision for the segregation of one or more copies in each of a selected number of bins or compartments, so that each division or compartment of a business organization will be furnished with a complete set of copies, such for instance as orders, invoices, inventories, records or the like.

The machine, in its essentials, comprises a movable carriage, which is divided into bins or compartments which are progressively moved, step by step, to the delivering end of the duplicating machine or other mechanism from which the sheets are delivered, in conjunction with automatic control mechanism, which may be set in advance to selectively deliver the desired number of sheets into each compartment, or, if desired, to skip certain compartments so that in each instance, by previous manipulation it is possible to set the machine for automatic operation in the delivery of the number of sheets required to furnish replicas of the same data to each of several selected departments of a business organization.

Provision is also made for disabling the automatic operation of the machine at any time so that a greater number of sheets may be delivered to any particular bin than the number within the range of automatic control, so that it is possible, under special circumstances, to regulate the delivery of sheets by counting operation.

Further objects and details will appear from the description of the invention in conjunction with the accompanying drawings wherein Fig. 1 is a longitudinal sectional elevation illustrating the sheet distributing mechanism combined with a rotary duplicator of the character described in Patent No. 1,979,285.

Fig. 2 is a plan view, partially broken away, showing the automatic control mechanism for releasing the carriage in its step by step movement to the sheet delivering end of the rotary duplicator.

Fig. 3 is a detail of the stop mechanism for predetermining the number of sheets to be delivered into any particular bin or compartment of the carriage.

Figs. 4 and 5 are sectional details taken on line 4—4 of Fig. 3.

Figs. 6 and 7 are sectional details of the track way for the carriage.

Fig. 8 is a detail taken on line 8—8 of Fig. 2.

Fig. 9 is a wiring diagram for the mechanism provided to automatically controlling step by step release of the carriage by a pre-arranged set-up in the switch box.

Figs. 10, 11 and 12 are details of the latch mechanism controlled by the presence of a sheet advancing to the delivery point for conditioning the operation of a carriage mechanism.

Fig. 13 is a sectional elevation similar to Fig. 1, but illustrating a modified form of delivery for the sheets.

Fig. 14 is a fragmentary view showing a modification in which means are provided for moving the carriage by power, both in its advance and its return movements.

Fig. 15 is a detail showing a convenient clutch arrangement for actuating the power mechanism with Fig. 14; and

Fig. 16 is a further modification showing power means for returning the carriage in its uppermost position in preparation for a gravity feed during the sheet receiving operations.

Referring to Fig. 1, a rotary duplicator 20 of the character described in detail in Patent No. 1,979,285 is employed which includes a curved stationary bed plate 21 over which is stretched a gelatine band 22 fed from spools or spindles 23 in the usual manner. The exposed portion of the gelatine band has impregnated there into the copy to be transferred to the upper sheets which are fed from a table 21a to stop mechanism 24 at which point the leading edge of the paper sheet is pressed against the sticky surface of the gelatine in preparation for the advance of a pressure roll 25 carried by a rotating ring 26 which also carries stripper rolls 27 located at a suitable distance behind the pressure roll 25. With this arrangement, the pressure roll engages the paper sheet *a* from beneath and flips it over on to the gelatine surface and during the traverse of the pressure roll, the impression is imparted to the paper sheet, which is thereafter stripped from the gelatine by the arrival of the stripper rolls 27 which feeds the paper outwardly over the surface of a shield plate 28 in the manner described in the patent aforesaid, in preparation for the release and delivery of the sheet.

This principle of operation is fully described in the patent aforesaid and need not be referred to in full detail.

The shield of the duplicating machine here employed, for the purposes of the present inven-

tion, has applied thereto a plurality of trip fingers 29 which are best illustrated in Figs. 10, 11 and 12. These fingers are secured to the revolvable shield 28 (Fig. 1) near the front or discharge end thereof, and each is mounted on a pintle 30 in such position that the free ends 31 of the fingers will normally project beyond the surface of the shield. Whenever a paper sheet is carried around by the shield toward the point of discharge, the fingers will be held inwardly toward the surface of the shield by the pressure of the paper, and this has the effect of moving the fingers to the dotted line position shown in Fig. 10. The entire group of fingers, which are of bell crank formation are connected by a cross rod 32 which carries a crank arm 33 engaging a link 34 secured to the free end of a pivoted latch 35 having a tooth 36 which engages a notch 37 in a draw bar 38 under tension of a spring 39. The draw bar at its opposite end carries a roller 40 of insulating material, which normally rides upon the surface of an arcuate cam 41. The bar 38 is slideably mounted within the surface of the shield and the roller 40 extends laterally beyond the edge of the shield, so that as the shield is revolved in conjunction with the stripper rollers, the roller will travel upon the edge of the stationary arcuate cam track 41, until it reaches the end of the cam track as illustrated in Fig. 10, at which point, if the latch be released by the presence of a paper sheet, the roller will move outwardly to the dotted line position in preparation for the successive contact with switch buttons 42 and 43, the first of which may be referred to as the wiping switch button, which functions in releasing the paper sheet from the surface of the shield and the latter of which may be called the brain switch button, which functions in the release of the stops required in holding the bin in position through one or more cycles of the duplicator operation to receive the number of sheets predetermined for said bin by the setting of the control switch in a manner presently to be described.

The depression of the switch button 42 operates to close a wiping switch 44 and the depression of the brain switch button 43 operates to close a brain switch 45. The above mechanisms are the only ones which are applied directly to the duplicator machine itself, and which are special to the present invention.

The sheet distributing mechanism in the form shown in Fig. 1 includes a carriage 46 comprising a lower frame 47 and an upper frame 48 connected by struts 49. The carriage is divided into bins or compartments by obliquely positioned spaced plates 50, each of sufficient capacity to receive a large number of sheets intended for a particular department or division of the business, so that all of the sheets received into a particular department will from time to time, be delivered to the department to which the particular compartment is appropriated. As shown, the carriage is provided with ten bins or compartments, although obviously a greater or lesser number can be employed depending upon the intended capacity of the machine. As shown in Fig. 1, the carriage is mounted obliquely to travel by gravity downwardly along tracks 51, being provided, with rollers 52 which ride upon the tracks which are suitably mounted and held within the frame of the machine. In the form of construction shown in Fig. 1, the carriage, at the beginning of its operation will be drawn upwardly to the uppermost position of the track way by power mechanism presently to be described, although it may be restored to the upper position by hand, if the use of power is not deemed necessary. The descent of the carriage, step by step, is by gravity and the timing of the gravity movements is affected by the setting of the control mechanism so that the carriage, in each instance, will remain in the desired receiving position until the intended number of sheets has been delivered into a particular bin or compartment. In the form shown in Fig. 1, the sheets, when stripped from the gelatine band and carried around to the lower side of the duplicating machine, will fall upon an endless conveyor 53 and in order to effect a positive release of the sheets at the desired point, a wiper 54 of sponge rubber is provided which is carried by a bell crank arm 55, the opposite end of which is connected by a link 56 with a solenoid 57 adapted to be energized by the closing of the wiping switch 44 so that each time a sheet arrives at the proper point, the wiping fingers will be swung upwardly into position shown in dotted lines in Fig. 1, to engage the surface of the sheet and hold it against further advance, in the event it tends to adhere to the surface of the shield 28, thereby effecting a positive discharge of the sheets to the advancing surface of the endless conveyor, which latter is preferably formed of separated strips with one or more wipers 54 positioned to operate between the strips of the conveyor.

The frame 47 of the carriage is provided with a longitudinally extending release bar 58 provided at spaced intervals in its edge with notches 59, one for the uppermost position of the carriage before its initial release, and one for each of the bins or compartments. The notches are adapted in succession to coact with a stop roller 60 mounted at one end of a pivoted lever 61, the other end of which is connected by a link 62 with a core 63 of a carriage release solenoid 64 which operates against the tension of a spring 65. When the solenoid is energized, the core will be drawn inwardly momentarily releasing the roller 60 from engagement with the notch 59 so that the carriage will be released to roll downwardly, but since the energizing of the solenoid is momentary only, the roller will be free to roll into the next notch and again stop the carriage in the next receiving position. Provision, however, is made for the skipping of one or more bins in a manner presently to be described.

Below the carriage, and fixedly secured to a stationary frame 66, is a commutator panel 67 provided with groups of commutator plates arranged in the manner shown in Fig. 2, a single group being provided for each of the bins or compartments. Each group includes a single long commutator strip 68 which functions in the illuminating of a light appropriate to the currently positioned bin, and which may therefore be referred to as the light commutator.

Adjacent the light commutator is a commutator strip 69 which functions in the drawing back of a feeler bar 70 in preparation for the setting of the number of stops required to give the bin its intended number of paper sheets. The commutator 69 may therefore be called a setting commutator. Adjacent the commutator 69 and in over-lapping relation thereto are a plurality of commutator strips 71*a*, 71*b*, 71*c*, 71*d* and 71*e*, being five in number and adapted to make provision for the automatic deposit of a maximum of five sheets in each of the bins, although ob-

viously a greater or lesser number of such commutator strips may be utilized. Since these commutator strips control the functioning of the stops which limit the progressive restoration of the feeler bar 70 to carriage releasing position, they may be properly referred to as the stop commutator strips.

Stationary commutator panel cooperates with a multiple trolley device 72 which includes a trolley arm for each commutator strip, which trolley arm is pivoted at its center to a cross bar 73 suspended from the moveable carriage by hangers 74. Each trolley arm at each end is provided with a roller and each upper roller makes contact with a trolley wire. The trolley wire 75 co-acts with the light commutator strip 68. The trolley wire 76 coacts with the feeler bar commutator strip 69, and the trolley wires 77 coact with the stop commutator strips 71*a*, etc.

The commutator strips 69 are in circuit with a solenoid 78 having a core 79 connected by a link 80 with a lever 81 (see Fig. 9), which lever in turn is connected by a link 81*a* with a lever 81*b* mounted on a pivot 81*c* and having its free end connected by a link 81*d* with the end of the feeler bar 70. The feeler bar at its opposite end terminates in an insulated head 86 adapted at the end of its stroke to engage and move a switch contact 87 which coacts with a stationary contact 88 in closing the circuit which includes the solenoid 64 momentarily releasing the carriage stop roller 60. The feeler bar 70 carries a contact point 89 and in succession comes in register with contacts 90 (see wiring diagram Fig. 9), which latter contacts are respectively in circuit with a group of solenoids 82 (Fig. 3) one of which 82*a* is oppositely positioned with respect to the position occupied by the remainder of the group. This group of solenoids may be referred to as the stop releasing group in the progressive restoration of the feeler bar 70 to the final position in which it closes the switches 87 and 88. In case it becomes necessary in correcting a mistake to throw down the stops by manual operation, a wiping switch 80*a* may be thrown, which closes the circuits leading to the solenoids 82.

The stop releasing group of solenoids coacts with a stop setting group 83, the middle member 83*a* of which is oppositely arranged as compared to the arrangement of the remaining members of the group.

The cores of companion solenoids 82 and 83 are connected in each instance by a bar 91, which bars are in each instance connected by linkage 91*a* with an associated pivoted stop finger 92 which set of stops, five in number, are arranged in aligned relation and adapted to be thrown into the path of a roller 93 mounted within a bracket 94 carried by the feeler bar 70. The end of the bracket is connected by a spring 95 which urges the feeler bar, when released toward the switches 87 and 88, and in order to steady the travel of the roller 93, a track wire 96 is provided upon which the roller is arranged to travel. The feeler bar is mounted within guides 97.

In the arrangement shown, the energizing of the entire group of solenoids 83, 83*a* will be affected by contact of the trolley wheel with the associated commutator strip 69 which has the effect of throwing the entire group of stops 92 into the releasing position shown in Fig. 4, simultaneously with the drawback of the feeler bar 70 by the energizing of the solenoid 78. This action however, is but momentary since the trolley wheels will thereafter make contact with the stop setting commutator strips 71*a*, 71*b*, etc., which are in circuit with the solenoids 82, 82*a*, so that a selected number of stops will be instantly thrown to the right in Fig. 5 and in position to arrest the return movement of the roller 93 in a manner which will be hereinafter described more in detail.

The machine is provided with a control switch box 98 of the general character utilized at the present time in selective radio tuning, which switch box in the present instance is provided with ten groups of press buttons, one group for each bin or compartment, which buttons may be selectively set in advance to control the movements of the carriage and the stopping periods to receive into the respective compartments in each instance the number of paper sheets apportioned to each. The groups of press buttons are preferably of colors special to each of the different bins or compartments, and as shown are arranged in ten vertical rows. The first or lowermost button 99, one for each group and standing collectively in the lowermost horizontal row, is provided for cutting out the circuits for the entire compartment, so that the compartment will travel past the sheet discharging position without stopping, with the result that no paper sheet will be deposited. The remaining five buttons 101 of each vertical group are provided for the selective setting of the stop mechanisms to time the arrest of the carriage for the deposit of a single sheet, or for a proportionately longer period, until the intended number of sheets is deposited in each bin or compartment, depending upon which of the five buttons is depressed. Thus, by depression in advance of the appropriate button 101 in each group, the subsequent operations of the machine will be automatically controlled to accumulate the intended number of sheets in each compartment, or to skip certain compartments entirely as conditions may require.

By referring to the wiring diagram (Fig. 9), this operation will be fully understood. The wiring diagram represents only two of the groups of buttons 99 and 101, it being understood, however, that a like wiring arrangement is employed for each group of buttons. The button 99 controls a switch 103, and each stop setting button 101 controls the associated switch 104, all of which switches are normally in circuit closing relation through wires 105 with the commutator strips 71*a*, 71*b*, etc., while the light circuit is in closed circuit relation through a wire 106 with the light commutator strip 68. The depression of any one stop setting button 101 therefore opens the associated switch and cuts out the circuit beyond said button so that it is then possible only to energize the number of stop setting solenoids 83 which remain in closed circuit relation. The trolleys 72 are in circuit relation with the group of solenoids 83 through circuit wires 107, all of which connect with a header wire 108 in a circuit which includes the brain switch 45 and also includes a header wire 109 having leads extending through the solenoids 82 and the contacts 90, which latter are adapted to be successively closed by the feeler bar 70, having the contact point 89 which connects with a line wire 110.

The button control circuits are also connected with a line wire 111. The commutator strip 69 is in circuit with the solenoid 78 through a wire 112 which leads to the line wire 110. 110*a* is a continuation of the line wire 110 and is in circuit with solenoid 64 through switches 87 and 88,

the circuit however, being adapted to be broken by a hold switch 114 operated by a button 115 on the switch box.

Where the mechanism is to be operated by power, a motor 116 is provided which continuously drives the conveyor 53 through the medium of a sprocket chain 117. The motor is provided with a motor shaft 118 upon which is loosely mounted a spool 119, upon which is wound a tape 120, which may be connected with the carriage frame as shown in Fig. 14 where it is desired to mount the carriage for horizontal travel and to rely upon power rather than upon gravity for the forward advance of the carriage. Where gravity is relied upon, these power connections are dispensed with and provision is made only for the upward return movement of the carriage to its highest position. This return movement is effected by a tape 121 wound upon a spool 122 loosely mounted upon the motor shaft in the manner previously described. Fig. 15 shows the mechanism for both advancing and restoring the carriage, while Fig. 16 omits the advance connections. The spool 119 and the spool 122, when both are used, are adapted to be alternately clutched to the motor shaft by clutches 123 and 124, each comprising a driven clutch element freely mounted upon the motor shaft and operated by lever 125 or 126, as the case may be, to engage with the associated constantly rotating driving clutch element fixedly mounted on the motor shaft. The friction clamp 127 is provided for each of the spools, so that sufficient resistance will be afforded against the drawing out of the tape connections to hold the same in taut relation at all times. Where power is relied upon, the carriage can be moved horizontally, vertically, or at any desired angle.

Fig. 13 shows a slight modification in which the conveyor 53 is dispensed with, and the sheets are carried around until they strike against an obliquely disposed plate 128, which serves to release them in position to fall into the particular compartment currently positioned to receive them. The particular means shown for the power driving of the carriage, either in one or both directions, serves merely for purposes of illustration and as an adequate form of mechanism, but it will be understood that any other type of power connection may be employed for the same purposes.

The motor 116 is shown in circuit between the line wires 110*a* and 111 through the medium of a switch 129 and connecting wires 130 and 131.

Operation

In operation the paper sheets are fed in the usual manner on a table from a stack or platform 21*a* and are caught and spread upon the gelatine surface by the revolution of the pressure roll 25 in the manner set forth in detail in Patent No. 1,979,285. The arrival of the stripping mechanism 27 strips the imprinted sheet from the gelatine and feeds it over the outside of the revolving shield 28 which carries it down to the point of deposit upon the conveyor 53 (or to the plate 128 as the case may be). Where the conveyor is employed, and with a sheet in place on the shield, the bar 38 will be unlatched by the withdrawal of the latch hook 35 so that as soon as the roller 40 rids off the stationary cam 41, it will momentarily contact the wiper button 42 and close the switch 44, momentarily energizing the solenoid 57 which throws up the wiper 54 and arrests the paper sheet causing it to fall upon the conveyor 53 for deposit into the appropriate bin or compartment.

The special features of the present invention, however, are mainly concerned with means operable from the control switch box for releasing the carriage for its step by step advance to the paper depositing position.

By depressing in each of the groups on the control switch box, the particular button 101 which controls the arresting of the carriage during one or the intended number of sheet depositing intervals, the step by step travel of the carriage will be predetermined throughout each stage of its operation. For instance, if the third button 101 in the first vertical group representing the first or lowermost compartment of the carriage is set, it will cut out all circuits above the corresponding switch 104, thereby limiting the number of sheets to be deposited to three.

The carriage will be released from its retracted position by the closing of the motor switch 129, which preliminarily energizes the solenoid 64 with the switch 87—88 closed by the pressure of the feeler bar 70. As the carriage approaches the first sheet receiving position, the associated trolley roller will ride along the commutator strip 68 which illuminates the corresponding light 100 through the circuit including the line wire 111, light circuit wire 106, commutator strip 68, roller 72, wire 108, and back to line wire 110*a*. While this circuit is still closed, one of the rollers will engage the commutator strip 69 which closes the circuit through the solenoid 78, thereby drawing back the feeler bar 70. This circuit includes line wire 110, solenoid 78, wire 112, commutator strip 69, associated roller 72, line wire 108, and back to line wire 110*a*. Commutator strip 69 overlaps the shorter strips 71*a*, 71*b*, etc. which are in circuits including the switches 104, so that the feeler bar 70 will be released from the pull of the solenoid 78 while the trolley wheels are still in contact with the commutator strips 71*a*, 71*b*, etc.

When this condition obtains, one or more circuits will be closed through the commutator strips 71*a*, (71*b*, etc.) and the closing of this circuit or circuits will energize one or more of the solenoids 83, thereby setting up one or more of the stop fingers 92. This circuit (or circuits) includes the line wire 110, one or more switches 104, wires 105, commutator strips 71*a*, 71*b*, etc., associated trolley rollers 72, wire or wires 107, one or more solenoids 83, header wire 108 and back to line wire 110*a*. In view of the overlapping between the commutator strips, the stops will be set up slightly in advance of the release of the feeler bar 70, so that the latter, when released, will move under the tension of spring 95 until it encounters the first stop set up in the series where its position will be arrested with the contact point 89 in circuit with the associate contact 90 in the circuit which includes the solenoids 82, header wire 109, brain switch 45 and return back to line wire 110*a*. This conditions the circuit for closing as soon as the roller 40 encounters the brain switch button 43. As soon as the brain switch is closed, the first stop finger 92 will be released and the feeler bar 70 will move to the right in Fig. 2 until it encounters the next stop if more than one be set. It will be understood that the stops are thrown down in successive order at the instant of arrival of a paper sheet at or near the point of deposit so that if three stops are set up by the depression of the third button of a group in the switch control box, the feeler bar will not be completely released until three paper sheets have been de-

posited in the intended bin or compartment of the carriage, but after the throwing down of the last stop, the feeler bar will move to its extreme right hand position in Fig. 2 thereby closing the switches 87 and 88, which thereupon energizes the solenoid 64 momentarily drawing back the carriage stop roller 60 and allowing the carriage to advance to the next position, and to there receive the number of sheets predetermined by the setting of the switch group appropriate to said position.

If it is desired to temporarily disable the setting up mechanism in the control switch box, the hold button 115 may be depressed which opens the switch 114 in the circuit of solenoid 64, which prevents the operation of the solenoid and permits the operator of the machine to hold the carriage at rest in any desired position for the purpose of counting off a number of sheets in excess of the capacity of the control switch setting or where it is otherwise desired to disable the automatic feature.

In the use of the so-called brain switch, the operation of the machine will be ineffective except when a paper sheet is being delivered since the final closing of the brain switch is essential to energize the previously conditioned circuit and effect the stepping off of the feeler bar to its final position at which it is enabled to close the circuit which effects the final release of the carriage.

Although in Fig. 2, the solenoids 82 and 83 together with the stop mechanism, feeler bar and associated solenoid are shown in close proximity to the carriage release roller 60, it is not essential that these parts be in physical proximity to one another, since the entire mechanism for setting the stops and progressively stepping off the feeler bar can be enclosed in a suitable box or housing located at any convenient point within the frame of the machine. It is of course essential that the various movements be properly timed so that the carriage will be accurately positioned to receive each oncoming paper sheet or sheets into the appropriate bin or compartment, but this timing is effected by a proper positioning of the brain switch button, so that the release of the carriage will not occur until a full complement of sheets has been delivered into the intended compartment. Although the invention has been described with full particularity as to detail, it will be understood that numerous modifications may be made therein without departing from the spirit of the invention.

Furthermore, although the machine is described in associated relation with the duplicating machine for which it is primarily intended, it will be understood that the distributing mechanism is applicable to various types of mechanisms designed for the purpose of distributing sheets or the like, from a common point of delivery, and in the required number in each instance to permit subsequent distribution for any appropriate purpose, and although, as described, the carriage is movable with relation to the point of discharge for the sheets, it will be understood that relative movement only is essential and that the general principles of the present invention are applicable to a machine in which the sheet delivering mechanism is the movable element under control in the manner herein described.

We claim:

1. In a machine of the class described and in combination with means for delivering sheets or the like, a carriage provided with compartments and mounted for movement to bring said compartments successively to the point of delivery, means for effecting the movements of said carriage, and control mechanism adapted to be set in advance to hold the carriage in receiving position throughout a predetermined number of cycles of operation of the delivering mechanism, said means including a brain switch and an electrical mechanism in circuit therewith for actuating the carriage moving means, said brain switch being adapted for actuation only by the presence of a sheet or the like traveling to the delivering position.

2. In a machine of the class described and in combination with mechanism for delivering sheets or the like, a carriage provided with a plurality of compartments and adapted to move to bring said compartments successively to the sheet delivering position, release mechanism for the carriage adapted when released to permit movement thereof, and control mechanism adapted to be set in advance to defer action of the carriage release mechanism during a predetermined number of cycles of operation of the sheet delivering mechanism, said control mechanism including a group of stops for each compartment and means for selectively setting the number of stops corresponding to the intended number of cycles of operations of the delivering mechanism, and means controlled by the passage of a sheet to the delivering position for throwing down said stops in succession and means effective after the throwing down of the last stop for actuating the carriage release mechanism to bring the next compartment into sheet receiving position.

3. In a machine of the class described and in combination with mechanism for delivering sheets or the like, a carriage mounted for movement with respect to the sheet delivering position and provided with a plurality of compartments, release mechanism adapted when released to permit movement of the carriage, a commutator panel provided with a group of commutator strips one group associated with each compartment, trolley members carried by the carriage and adapted as the carriage moves to make contact with the commutator strips of each group, a control board having switch setting devices for establishing circuit connection with a selected number of each group of commutator strips, stops and means in circuit with said commutator strips for setting up a selected number of stops through trolley contact with the associated commutator strips, a feeler bar and means associateed with a commutator strip in each group and adapted through trolley contact to effect the drawing back of the feeler bar into position to thereafter encounter said stops when set and adapted thereafter to move toward stop encountering positions, and means adapted to be actuated by the passage of a paper sheet toward the delivering position to throw down said stops successively with each sheet delivering operation and means actuated by the feeler bar after escaping the last stop for effecting an operation of the carriage release mechanism.

4. In a machine of the class described and in combination with mechanism for delivering sheets or the like, a carriage provided with a plurality of compartments and movable step by step to sheet delivering position, a commutator panel provided with a group of commutator strips for each compartment, and trolley mechanism carried by the carriage for contacting the commutator strips of each group, a release mechanism for the carriage and a solenoid for operating said release mecha-

nism, a control panel provided with switch means adapted in advance to establish circuit connections with a selected number of commutator strips, a group of stops and means in circuit with the commutator strips of a group for throwing a selected number of said stops to stopping position, a feeler bar adapted when in released position to close a circuit for energizing the carriage release solenoid, means for retracting the feeler bar beyond the group of stops and a commutator strip in each commutator group adapted through trolley connection to energize said retracting means, and means for successively throwing down the stops to progressively release the feeler bar, said means including a device adapted to be actuated by the passage of a paper sheet toward delivering position.

5. In a machine of the class described and in combination with mechanism for delivering sheets or the like, a carriage provided with a plurality of compartments and movable step by step to sheet delivering position, a commutator panel provided with a group of commutator strips for each compartment, and trolley mechanism carried by the carriage for contacting the commutator strips of each group, a release mechanism for the carriage and a solenoid for operating said release mechanism, a control panel provided with switch means adapted in advance to establish circuit connections with a selected number of commutator strips, a group of stops and means in circuit with the commutator strips of a group for throwing a selected number of said stops to stopping position, a feeler bar adapted when in released position to close a circuit for energizing the carriage release solenoid, means for retracting the feeler bar beyond the group of stops and a commutator strip in each commutator group adapted through trolley connection to energize said retracting means, and means for successively throwing down the stops to progressively release the feeler bar, said means including switch mechanism adapted to be controlled by the passage of a paper sheet toward delivering position for successively throwing down said stops as paper sheets are delivered and until the last stop is displaced, thereafter permitting the feeler bar to effect energizing of the carriage release solenoid.

6. In a machine of the class described and in combination with mechanism for delivering paper sheets or the like, a carriage movably mounted and provided with a plurality of compartments adapted to be successively brought to the delivering position, setting up mechanism adapted to be set to predetermine the movements of the carriage and to arrest the same for the delivery of one or more sheets into each selected compartment, a plurality of stops and means under control of the setting up mechanism for setting up the required number of stops for each arrest of the carriage at the discharging position, means controlled by the setting of said stops for holding the carriage in arrested position and adapted to release the carriage after the withdrawal of the last stop, and means controlled by the movement of a paper sheet to the discharging position for successively restoring the stops to ultimately effect release of the carriage.

7. In a machine of the class described and in combination with means for feeding paper sheets or the like to discharging position, a movable carriage provided with compartments adapted to be successively moved to the discharging position, a plurality of stops adapted when one or more are positioned to arrest the further movement of the carriage to hold each compartment in succession in sheet receiving position, selective setting up mechanism for each compartment adapted to predetermine the period of arrest of the carriage to receive the desired number of sheets, and means controlled by the setting up mechanism for setting a desired number of said stops for effecting arrest of the carriage for a corresponding period to permit the associated compartment to receive a number of sheets corresponding to the number of stops set up, means controlled by the passage of sheets to the compartment for successively restoring the stops, and means actuated by the restoration of the last stop for permitting the carriage arresting mechanism to release the carriage for continued movement.

8. In a machine of the class described and in combination with means for feeding sheets or the like to the discharging position, a movable carriage provided with compartments, and means for effecting movement of the carriage to bring the compartments successively and in uniform sequence to the sheet discharging position, means for arresting the carriage setting up mechanism for each compartment for controlling the period of arrest of the carriage to permit each compartment to receive the number of sheets predetermined by the positioning of the setting up mechanism, and adapted after said period has expired to permit movement of the carriage to the next sheet receiving position.

9. In a machine of the class described and in combination with means for feeding sheets or the like to the discharging position, a movable carriage provided with compartments, and means for effecting movement of the carriage to bring the compartments successively to the sheet discharging position, setting up mechanism for each compartment for selectively controlling the period of arrest of the carriage to permit each compartment to receive the desired number of sheets, stop mechanism under said control for arresting the carriage during the intended period, and adapted after said period has expired to release the carriage for movement to the next sheet receiving position, and means adapted to be actuated only by the passage of sheets to the discharging position for rendering the action of the setting up mechanism effective only under such conditions.

10. In a machine of the class described and in combination with continuously operating mechanism for delivering paper sheets or the like, a movable carriage provided with a plurality of compartments adapted to be successively and in uniform sequence brought into sheet receiving position, a control box provided with groups of switch buttons one group for each carriage compartment, and adapted upon actuation of a selected button to predetermine the number of sheets to be received into the associated compartment, switch mechanisms actuated by said buttons, electrical connections controlled by said switches, mechanisms actuated through said electrical connections and adapted to hold the carriage in sheet receiving position until each compartment has received the number of sheets commensurate with the predetermined setting of the associated switch button and adapted to thereupon release the carriage for relative travel to the next sheet receiving position, and mechanisms for suspending the operation of the carriage holding and releasing mechanisms save during the passage of a sheet.

11. In a machine for the class described, the

combination of mechanism for delivering sheets or the like and a carriage having therein a plurality of compartments, the sheet delivering mechanism and the carriage having progressive relative movement with respect to one another in uniform sequence to permit the discharge of sheets into each compartment, and setting up mechanism adapted to be set in advance to predetermine the number of sheets to be discharged into each compartment and means controlled thereby and adapted to maintain the sheet delivering mechanism and the carriage in stationary relation to one another until each compartment has received the number of sheets predetermined by the positioning of the setting up mechanism and to thereafter effect relative movement of the carriage to bring the next compartment included in the predetermined setting into sheet receiving position.

12. In a machine of the class described, the combination of mechanism for delivering sheets or the like and carriage mechanism provided with compartments, the sheet delivering mechanism and the carriage having relative movement with respect to one another to bring the compartments successively into sheet receiving position, setting up mechanism having a group of members for each compartment adapted to permit a predetermined setting to arrest the parts against movement until the associated compartment has received a corresponding number of sheets, means controlled by the discharging of the sheet for rendering the setting up mechanism effective in timing the arrest of relative movement between the carriage and the sheet delivering mechanism, and means effective after the discharge of the predetermined number of sheets for effecting relative movement between the carriage and the sheet delivering mechanism to bring the next compartment of the carriage to sheet receiving position.

13. In a machine of the class described and in combination with means for carrying paper sheets or the like to the discharging position, a carriage provided with compartments, means for effecting relative movement between the paper discharging means and the carriage to bring the compartments in uniform sequence to sheet receiving position, means for effecting relative arrest of the carriage and the sheet carrying means for the successive discharge of paper sheets into each of the compartments, and setting up mechanism for each compartment including members adapted to be set in advance and effective when set to control the operations of the arresting means and prevent movement between the carriage and paper discharging means during a period of time in each instance adequate to permit reception of sheets into each selected compartment in number predetermined by the selective setting and adapted thereafter to effect release of the carriage to bring the next compartment into receiving position.

14. In a machine of the class described and in combination with mechanism for delivering sheets or the like, a carriage mounted for movement with respect to the delivering position and provided with a plurality of compartments, release mechanism adapted when released to permit movement of the carriage, a commutator panel provided with groups of commutator contacts one group associated with each compartment, control members movable concurrently with the carriage and adapted as the carriage moves to engage the commutator contacts of each group, a control board having switch setting devices for establishing circuit connection with selected members of the groups of commutator contacts, and means under the control of the switch setting devices for timing the action of the carriage release mechanism in conformity with the individual positioning of the switch setting devices in each group to provide for the reception into each compartment of the number of sheets predetermined by the positioning of the switch setting devices.

15. In a machine of the class described and in combination with mechanism for delivering sheets or the like, a carriage mounted for movement with respect to the delivering position and provided with a plurality of compartments, release mechanism adapted when released to permit movement of the carriage, a commutator panel provided with groups of commutator contacts one group associated with each compartment, control members movable concurrently with the carriage and adapted as the carriage moves to engage the commutator contacts of each group, a control board having switch setting devices for establishing circuit connection with selected members of the groups of commutator contacts, means under the control of the switch setting devices for timing the action of the carriage release mechanism in conformity with the individual positioning of the switch setting devices in each group to provide for the reception into each compartment of the number of sheets predetermined by the positioning of the switch setting devices, and means adapted to be actuated by the passage of a paper sheet toward the delivering position for counting off the number of sheets delivered and deferring the carriage release until said number of sheets corresponds to the positioning of the switch setting devices in the group controlling delivery into the compartment currently receiving such sheets.

16. In a machine of the class described and in combination with means for delivering sheets or the like, a carriage provided with compartments and mounted for movement during each complete cycle of operation to bring said compartments in regular uniform sequence to the point of delivery, means for effecting progressive movements of said carriage, and setting up mechanisms, adapted to be set in advance of the cycle of carriage movements, one group for each compartment and each group including selectively operated devices adapted to be preliminarily set to cause the subsequent arrest of the carriage upon arrival at the receiving position for said compartment, and if arrested to stand at the receiving position throughout one or more cycles of operation of the sheet delivering mechanism corresponding to the previous selective setting of said devices.

17. In a machine of the class described and in combination with means for delivering sheets or the like, a carriage provided with compartments and mounted for movement during each complete cycle of operation to bring said compartments in regular uniform sequence to the point of delivery, means for effecting progressive movements of said carriage, and setting up mechanisms adapted to be set in advance of the cycle of carriage movements, one group for each compartment and each group including selectively operated devices adapted to be preliminarily set to cause the subsequent arrest of the carriage upon arrival at the receiving position for

said compartment, and if arrested to stand at the receiving position throughout one or more cycles of operation of the sheet delivering mechanism corresponding to the selective setting of said devices, and means for rendering said control mechanisms effective to arrest the carriage by the presence of a sheet or the like traveling to the delivering position and adapted to otherwise render said control mechanisms ineffective.

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