

May 5, 1959

A. D. KALISH
COLLATOR

2,885,203

Filed Aug. 13, 1956

2 Sheets-Sheet 1

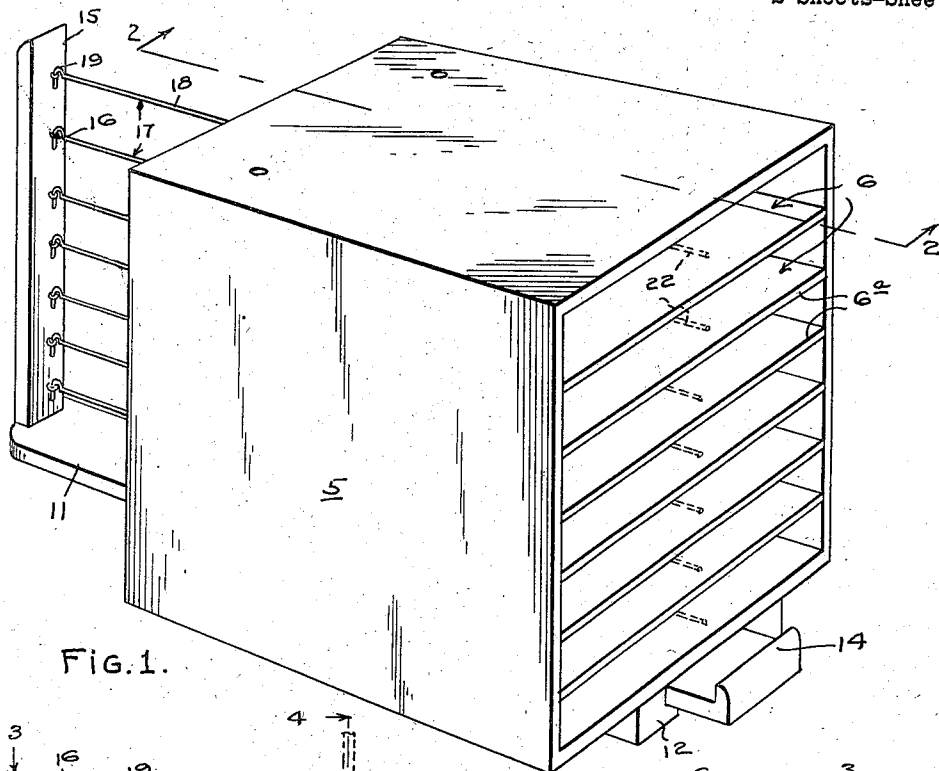


FIG. 1.

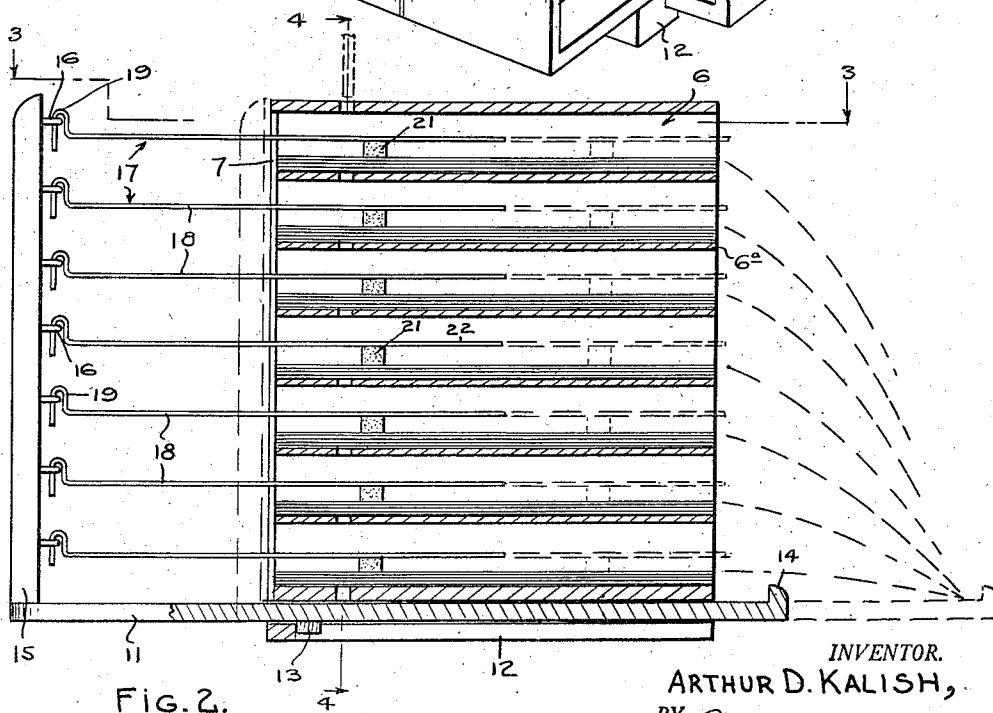


FIG. 2.

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2 Sheets-Sheet 2

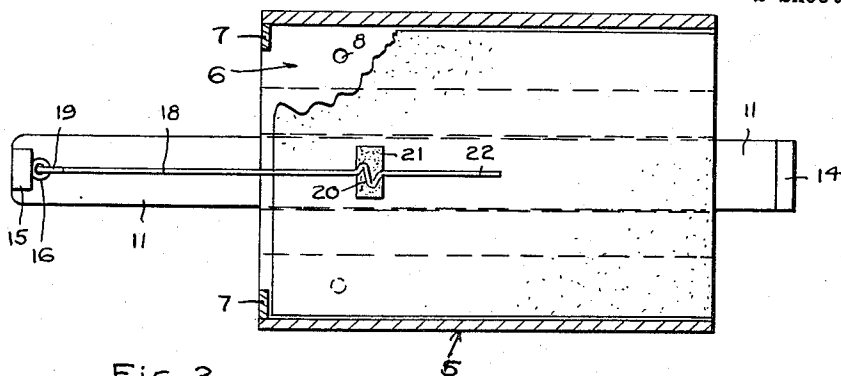


FIG. 3.

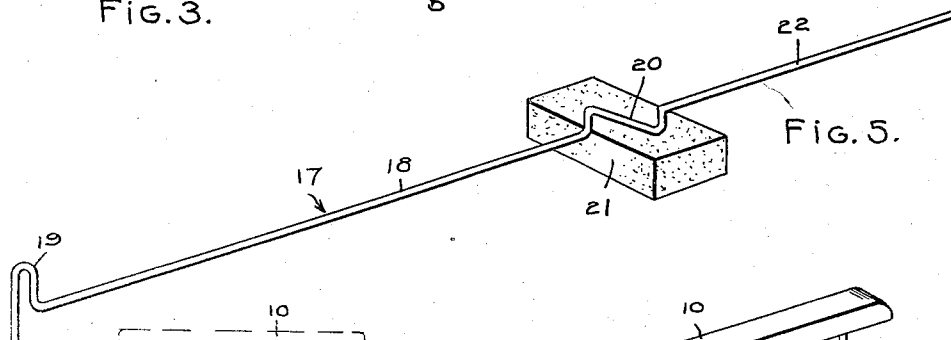


FIG. 5.

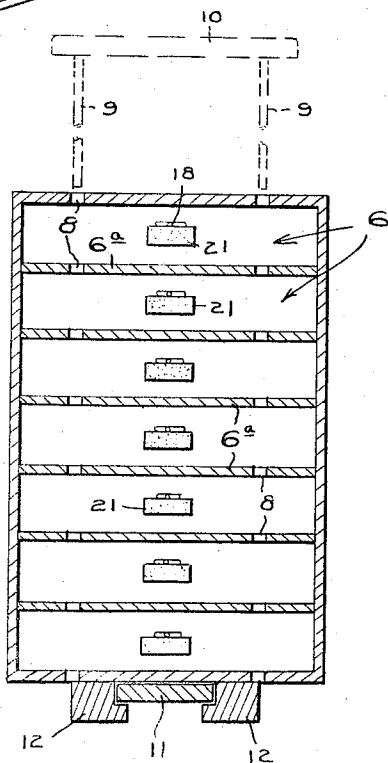


FIG. 4.

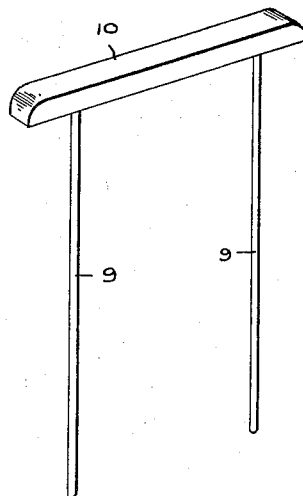


FIG. 6.

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2,885,203

COLLATOR

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3 Claims. (Cl. 270—58)

This invention relates to collators and has particular reference to a machine whereby to simultaneously project a single sheet of multiple groups of numbered pages and whereby the projected sheets may be subsequently accumulated in their numerical order for assembly.

The invention contemplates a cabinet embodying a plurality of compartments wherein is positioned multiple groups of mimeographed or otherwise produced sheets in numerical order and with projection means that is manually operable to shift and project the uppermost sheet in each compartment whereby the sheets will be disposed in a manner that permits them to be accumulated in their numerical order with a minimum of effort.

The invention further contemplates projection means that are floatingly associated with an actuating device and with the projection means each being provided with a friction head for engagement with the uppermost sheet in each compartment and with the friction being determined primarily by the weight of the projection means so that a single sheet of each group will be projected forwardly of the cabinet as the device is manually operated.

The invention further contemplates novel means whereby the cabinet may function to accommodate either legal or letter size sheets and the projection means and the operating means being substantially identical in each instance.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated the preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

Figure 1 is a perspective view of a collator constructed in accordance with the invention,

Figure 2 is a vertical longitudinal section taken substantially on line 2—2 of Figure 1 and with parts being illustrated in side elevation,

Figure 3 is a horizontal section taken substantially on line 3—3 of Figure 2,

Figure 4 is a vertical transverse section taken substantially on line 4—4 of Figure 2,

Figure 5 is a perspective view of one projection element and,

Figure 6 is a perspective view of a dowel device whereby to divide the several compartments in accordance with the length of sheets to be disposed therein.

Referring specifically to the drawings, the numeral 5 designates a cabinet that is horizontally divided into a plurality of compartments 6 of equal dimensions. The compartment 6 having a transverse width calculated to receive the conventional letter width of sheets. The compartments are open upon the forward side of the cabinet as illustrated and each compartment has a length calculated to receive the conventional legal size sheets of paper. The opposite sides of the rear ends of the compartments 6 are provided with strips 7 that serve to

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limit the positioning of the sheets within the cabinet and it is contemplated, that the sheets shall be substantially co-extensive with the partitions 6a of the compartments.

Since the cabinet is adapted to receive and project sheets of printed or multigraphed matter, it is desirable that the device be capable of varying the length of the compartments to accommodate either a letter size or a legal size sheet and whereby the forward ends of the sheets shall be substantially flush with the forward open ends of the compartments. To this end there has been provided in both the top and bottom of the cabinet and the several partitions 6a, preferably cylindrical and vertically aligned openings 8, for the reception of dowel pins 9 carried by a head 10. It will be apparent that when legal size sheets are employed, the dowel device 9 and 10 is removed and the sheets engage within their respective compartments 6 to a point where they engage the abutting or limiting strips 7, such being calculated to be the major depth of the cabinet to accommodate legal sheets. When letter size sheets are to be employed, the dowel device 9 and 10 is inserted through the several openings 8 whereby the dowels 9 form an abutment to limit the movement into the compartments of the letter size sheets. The parts so far described may be of wood, metal or plastic construction.

Means are provided to manually project a single uppermost sheet from all of the groups of sheets to be installed within the several compartments, comprising a slide bar 11 that underlies the lowermost partition 6a and with the slide bar being guided in a horizontal movement by guide rails 12, securely attached to the underside of the lowermost partition 6a. The bar 11 is limited in its rearward movement by a block 13. The bar 11 projects beyond the forward end of the cabinet and is provided with a lip portion 14 through the medium of which the bar may be manually shifted in a horizontal manner. The bar 11 has a length to project rearwardly of the cabinet 5 and is provided with an upstanding post 15, rigid with respect thereto. Detachably connected with the post 15, as though the medium of eyelets 16, are a plurality of relatively floating sheet projecting means indicated as a whole by the numeral 17. The sheet projecting means is provided for each of the compartments 6. Each of the sheet projecting means, see particularly Figure 5, embodies a horizontal and relatively stiff wire 18 that is bent at its rear end to form a hook 19 that engages the eyelets 16, thus supporting the projection device with respect to the post 15. The wires 18 intermediate their length are bent in a zig-zag manner, as at 20, see Figure 5 and this zig-zag section 20 is cemented in any desirable manner to the upper surface of a preferably sponge rubber pad 21. The wire 18 from the bent portion 20, is projected forwardly a predetermined distance so that in loading the device, and with the bar 11 shifted to its maximum forward position, the terminal end portions 22 of the wires will terminate substantially flush with the forward open side of the cabinet to thereby provide a convenient means to lift the rods and the connected pads in order to facilitate the insertion of a group of sheets within the respective compartments after which, the ends 22 are released and the pads and the wires 18 shift downwardly under their own weight to engage the pads upon the uppermost sheet in each group. Various means may be employed to connect the sponge rubber pads 21 with the wires, although the structure presented has been found very economical to manufacture.

In the use of the device, when the cabinet is to be loaded with groups of numbered sheets that are subsequently assembled in numerical order, the operator proceeds to shift the bar 11 forwardly to dispose the ends 22 adjacent the open side of the cabinet. The cabinet may be loaded beginning with the lowermost compart-

ment or it may be loaded beginning at the uppermost compartment. Assuming that the loading is to be started in the uppermost compartment, all of the group of sheets numbered one are engaged within the uppermost compartment by first lifting the projection device 17 and sliding the group of sheets into the compartment, after which the projection device is released and permits the pad 21 to rest upon the uppermost sheet of the group. The assembly is completed throughout the several compartments, and it is obvious, that the groups shall be in numerical order starting from the top of the cabinet downwardly. After the several groups of numbered sheets have been installed within their respective compartments, the bar 11 is shifted rearwardly causing the pads 21 to slide over the surface of the uppermost sheet to the maximum rearward positioning of the post 15. The rearward sliding movement of the post, the bar 11 and the pads 21 will cause no disassembly of the several sheets, since the rear ends of the sheets will have an abutting engagement with the strips 7. Now, when the sheets in the compartments are to be assembled or cumulated in numerical order, the operator slides the bar 11 forwardly by the lip portion 14, imparting a friction drag upon the uppermost sheet of each group and causing the uppermost sheet to be projected forwardly of the cabinet. The projected sheets, being of flexible nature, will bend downwardly, as indicated at dotted lines in Figure 2 and the operator then manually grasps the extended ends of the sheets and pulls their remaining portions from their compartments, thus quickly and easily grouping the sheets in their numerical order to facilitate a subsequent stapling or binding. As before pointed out, the cabinet is adapted to normally accommodate legal size sheets that extend from the forward open end of the cabinet to the strips 7. Now, when letter size sheets are to be employed, the dowel device 9 and 10 is engaged downwardly through the several openings 8, thus defining an area of the compartments corresponding to the dimensions of the letter size sheets. The projection of the letter size sheets is substantially identical to that previously described. The several projection devices 17 freely engage the eyelets 16, and floatingly support the wires 18 so as to impart a friction engagement to the sheets under the influence of the pads 21 to the extent only of the weight of the device, which weight has been calculated to be adequate to slide the several sheets forwardly for accumulated grouping.

It will be apparent from the foregoing that a very simple and economical form of collator has been provided. The device is simple in construction, is strong, durable and most effective as a means to accumulate in numerical order a group of printed sheets that are to be assembled in numerical order.

It is to be understood that the invention is not limited to the precise arrangement shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A collator whereby to project and accumulate multiple sheets in numerically numbered order, comprising a cabinet open at its forward end and with the cabinet being horizontally partitioned to form a plurality of substantially identically dimensioned horizontally arranged compartments for the reception of groups of numbered sheets, the cabinet being partially closed at its rear end to limit the insertions of the sheets, a slide bar supported beneath the cabinet and projecting both forwardly and rearwardly of the cabinet, the bar at its rear extremity being provided with an upstanding rigid post, sheet projecting elements floatingly and detachably connected with the post and with the elements extending forwardly into the several compartments, friction pads carried by the elements and with the pads having a resting engagement

upon an uppermost sheet in each group and whereby to frictionally engage the uppermost sheet, the said slide when shifted forwardly causing the several elements and their pads to frictionally project the uppermost sheet of each group forwardly of the cabinet for manual accumulation in their numerical order and a divider device that is extended through the several compartments and whereby to divide the compartments to accommodate either legal or letter size sheets, the said post being provided with a plurality of open screws eyes, each of the elements at their rear ends being bent to form hooks that detachably engage the eyes and whereby the elements and their pads floatingly rest upon the uppermost sheet in each compartment, the bar at its forward end being provided with a lip portion whereby to manually shift the bar and associated elements to and from their operative positions and means carried by the bar whereby to limit the rearward sliding movement thereof.

2. A collator whereby to project and accumulate multiple sheets in numerically numbered order, comprising a cabinet open at its forward end and with the cabinet being horizontally partitioned to form a plurality of substantially identically dimensioned horizontally arranged compartments for the reception of groups of numbered sheets, the cabinet being partially closed at its rear end to limit the insertions of the sheets, a slide bar supported beneath the cabinet and projecting both forwardly and rearwardly of the cabinet, the bar at its rear extremity being provided with an upstanding rigid post, sheet projecting elements floatingly and detachably connected with the post and with the elements extending forwardly into the several compartments, friction pads carried by the elements and with the pads having a resting engagement upon an uppermost sheet in each group and whereby to frictionally engage the uppermost sheet, the said slide when shifted forwardly causing the several elements and their pads to frictionally project the uppermost sheet of each group forwardly of the cabinet for manual accumulation in their numerical order and a divider device that is extended through the several compartments and whereby to divide the compartments to accommodate either legal or letter size sheets, each of the elements comprising a section of relatively stiff wire that is bent to hook form at its rear extremity, a plurality of connecting eyelets carried by the post and whereby to receive the hooks, the wires intermediate their length being bent to a zig-zag shape for supporting and cementing engagement with the upper surface of the pads, the wire being extended beyond the zig-zag bending to form a lifting end and whereby the elements may be bodily raised to insert the respective groups of sheets beneath the pads.

3. A collator whereby to project and accumulate multiple sheets in numerically numbered order, comprising a cabinet open at its forward end and with the cabinet being horizontally partitioned to form a plurality of substantially identically dimensioned horizontally arranged compartments for the reception of groups of numbered sheets, the cabinet being partially closed at its rear end to limit the insertions of the sheets, a slide bar supported beneath the cabinet and projecting both forwardly and rearwardly of the cabinet, the bar at its rear extremity being provided with an upstanding rigid post, sheet projecting elements floatingly and detachably connected with the post and with the elements extending forwardly into the several compartments, friction pads carried by the elements and with the pads having a resting engagement upon an uppermost sheet in each group and whereby to frictionally engage the uppermost sheet, the said slide when shifted forwardly causing the several elements and their pads to frictionally project the uppermost sheet of each group forwardly of the cabinet for manual accumulation in their numerical order and a divider device that is extended through the several compartments and whereby to divide the compartments to accommodate either legal or letter size sheets, the several compartments being dimensioned to receive sheets of

legal size, the cabinet and the partition being vertically apertured inwardly from their sides and with the several apertures being in vertical alignment, a pair of spaced apart dowels that are connected by a head bar and with the spacing of the dowels corresponding to the spacing of the apertures, the apertures being inwardly spaced from the rear of the cabinet, the apertures adapted to receive the dowels and whereby the dowels form a divider for the compartments to thereby dimension the compartment to receive sheets of letter size.

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