Feb. 16, 1932. R. J. WOOD 1,845,470

PLATE OR CARD EXHIBITING DEVICE

Filed Dec. 26, 1928 2 Sheets-Sheet 1

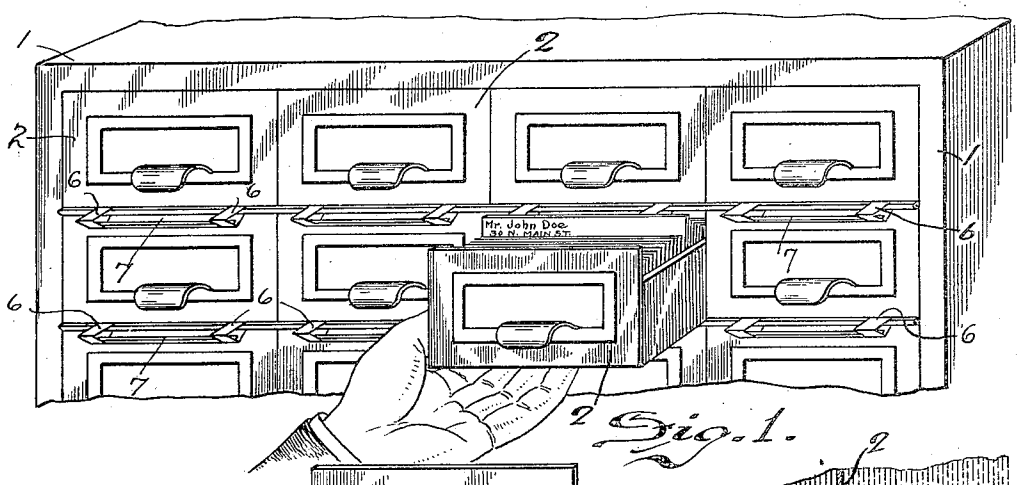


Fig. 1.

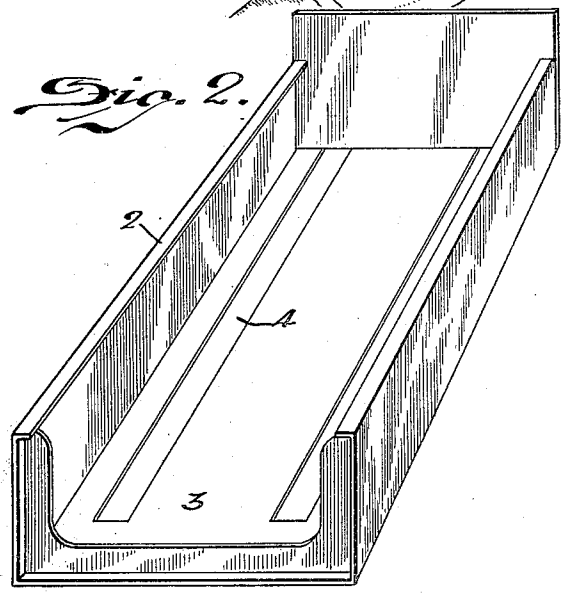


Fig. 2.

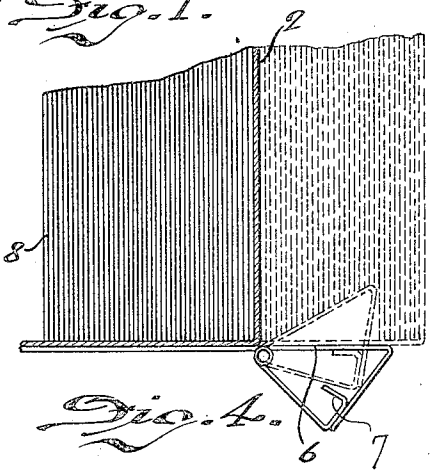


Fig. 4.

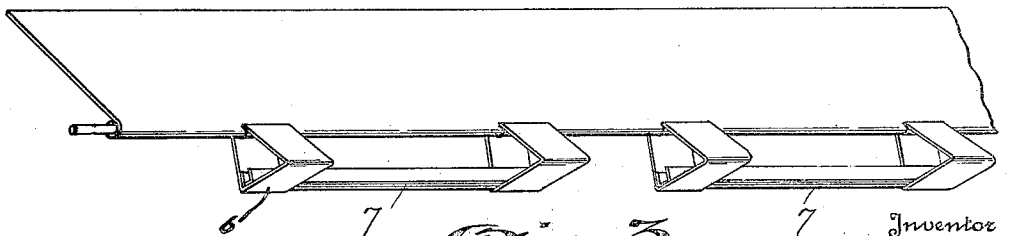


Fig. 3.

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Fig. 5.

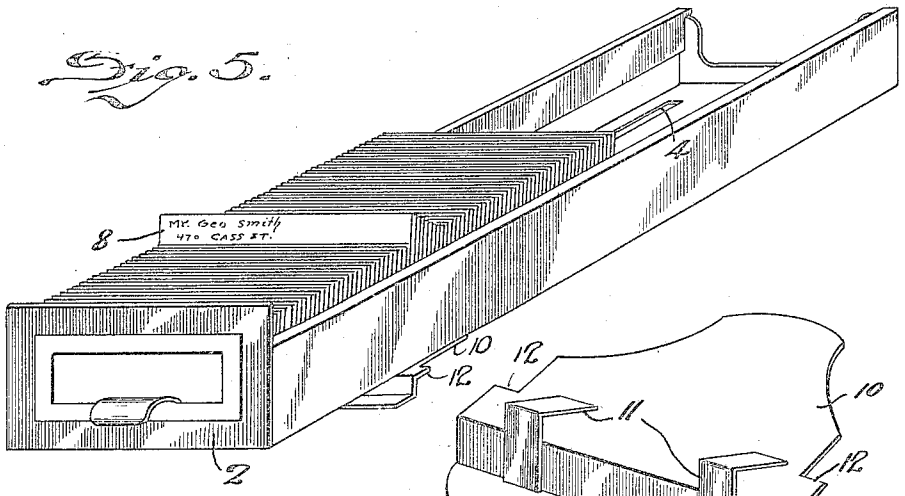


Fig. 6.

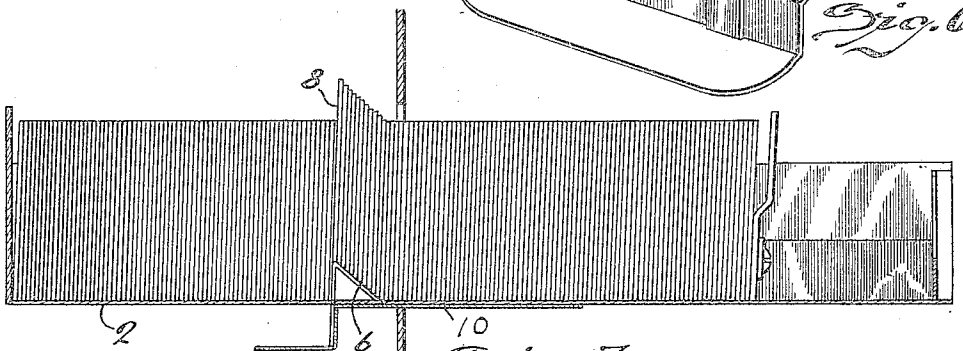


Fig. 7.

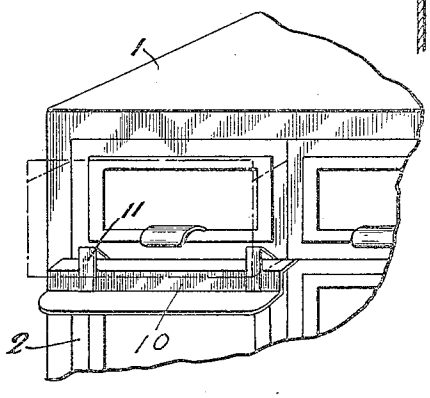


Fig. 8.

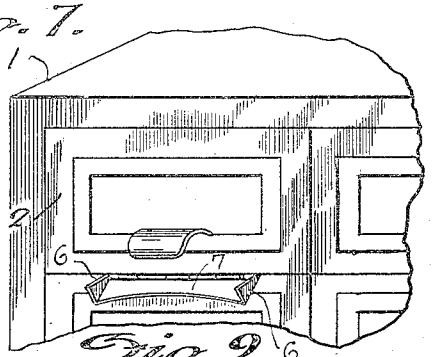


Fig. 9.

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Patented Feb. 16, 1932 1,845,470

UNITED STATES PATENT OFFICE

RODNEY J. WOOD, OF DAYTON, OHIO, ASSIGNOR TO REMINGTON RAND INC., OF BUFFALO, NEW YORK, A CORPORATION OF DELAWARE

PLATE OR CARD EXHIBITING DEVICE

Application filed December 26, 1928. Serial No. 328,332.

My invention relates to display means for cards, tablets, plates, and the like, and more particularly to means for successively projecting each of a series of vertically movable members into elevated position, in which its face is visible above adjacent members.

While the present device has been especially designed for use in connection with series of printing plates for use in mechanical addressing machines and the like, it is not limited to such use, but may be applied to displaying data or record cards, stencil or die plates and for operating carriers or frames for displaying samples of fabric, color charts and other relatively movable members which may be assembled in close sequence.

Such tablets, plates, cards or merchandise carriers are ordinarily stored in filing cabinets having drawers in which such members are vertically arranged. In the case of printing plates or stencils for addressing machines and the like, such storage drawer also forms the magazine from which the stencils or printing plates are automatically fed by the machine operation.

The present invention involves the provision of one or more longitudinal slots in the bottom of such storage drawer or container extending transversely of the vertically arranged members, and the provision of an inclined cam member or ramp to be projected through such slot into engagement with the plates or other members therein to be displayed. As the drawer is drawn longitudinally over such ramp or inclined cam member, the plates or tablets within the drawer will successively ride up such ramp to an elevated position. The ramp terminates abruptly, allowing each elevated plate or tablet to fall as it passes beyond the end of the ramp to its normal level, thereby exposing to view the face of the next succeeding elevated plate or tablet, which is yet supported by the ramp. The elevating cam or ramp may be an independent member to be manually held within the bottom slot of the container or drawer as the latter is drawn forwardly over such cam or ramp, or it may be an integral part of the filing cabinet, mounted thereon in such position as to engage the plates or tablets through the bottom slot as the drawer is withdrawn from the cabinet. Instead of drawing the drawer or container over the elevating cam or ramp, the latter may be moved relative to the drawer. In either event, the result will be to cause a traveling ripple or wave to progressively traverse the assembled series of vertical plates or tablets, one side of such ripple or wave being vertical and exposing to view the face of each tablet or plate.

The object of the invention is to simplify the structure, as well as the means and mode of operation of display and selecting means for a consecutive assembly of plates, tablets, cards, vertically movable carriers or the like, whereby such display means will not only be simple and cheap in construction, but will be efficient and rapid in operation, capable of being easily and quickly applied, and unlikely to get out of order.

In the case of printing plates and stencils for addressing machines and the like, no satisfactory means has heretofore been provided for indexing such plates. The provision of guide or division cards therebetween seriously interferes with the automatic feeding of such plates or stencils through the addressing machine. It is necessary to frequently revise collections of such plates for the purpose of correcting addresses, removing obsolete plates and replacing or inserting new plates. Such operation at present involves tedious handling of such plates one by one. The present device has been designed to present such plates to view in rapid succession without the necessity of individual manual removal of the plate.

A further object of the invention is to provide such display device which may be applied to existing collections of such plates or stencils and the like, and to further provide a device which may be embodied in a separate hand-operated device or be made a part of the filing and storage cabinet.

With the above primary and other incidental objects in view, as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of

operation or their equivalents as hereinafter described and set forth in the claims.

Referring to the accompanying drawings wherein is shown the preferred but obviously not necessarily the only form of embodiment of the invention, Fig. 1 is a perspective view of a portion of a filing or storage cabinet to which the present invention has been applied. Fig. 2 is a perspective view of a drawer or container having a slotted bottom for the introduction of the elevating ramp. Fig. 3 is an enlarged perspective view of a series of elevating ramps and a portion of the file cabinet to which the ramps are pivotally attached. Fig. 4 is an enlarged detail sectional view showing the range of adjustment of the elevating ramps relative to the drawer and its contents. Fig. 5 is a perspective view of a drawer or container showing a portion of the plates or tablets elevated above their normal level by means of the elevating cam or ramp of Fig. 6 introduced through the bottom of the drawer. Fig. 6 is a perspective view of an independent elevating or ramp device to be manually adjusted beneath the drawer or container. Fig. 7 is a longitudinal sectional view of a drawer or container to which the latter elevating device has been applied. Fig. 8 is a detail perspective view illustrating the interchangeable ramp device in its adjusted relation with a cabinet drawer. Fig. 9 is a perspective view of a modification of the construction shown in Figs. 1 to 5.

Like parts are indicated by similar characters of reference throughout the several views. While for purposes of illustration the present invention has been shown applied to and will be described in connection with a series of printing plates or stencils for use in an addressing machine, it is to be understood that the invention is not limited to such application, but may be applied to any series of independently movable laminæ, whether such laminæ be plates, cards, holders, frames or other members to be successively displayed by being projected upwardly above their normal level.

In the drawings, 1 is a cabinet and 2 the file or storage drawer for such plates, tablets or other elements to be displayed. For use in an addressing machine, the rear end of such storage or file drawer 2 is cut away, as indicated at 3 in Fig. 2. This recessed rear end of the drawer is in no way essential to the present invention. For the present purpose, the storage drawers or containers are provided with longitudinal slots 4 in their bottoms. While a single slot in each drawer may be sufficient, it has been found in practice desirable to provide duplicate slots located adjacent to the side walls of the drawer. If so desired, the front wall of the drawer may be notched coincident with the slot. This notching of the front wall, however, is not necessary. Pivotally connected to the front of the cabinet 1 immediately below each drawer 2, is a pair inclined cam members or ramps 6. The ramps 6 of each pair are interconnected one with the other by a transverse bar 7. The ramps 6 are positioned in registry with the slots 4 in the bottoms of the drawers 2. As the drawer 2 is being withdrawn from the cabinet 1, the inclined ramps 6 are pressed upwardly by the hand of the operator positioned as shown in Fig. 1 causing the ramps 6 to be projected through the bottom slots 4 of the drawer and into engagement with the plates or tablets contained therein. The upward swinging movement of the ramps 6 is limited by the engagement of the transverse connecting bar 7 with the underside of the drawer or container 2 intermediate the slots 4. The ramps 6 being held in their elevated position, the drawer 2 is withdrawn from the cabinet, causing the tablets or plates 8 therein to progressively engage and travel over the inclined ramps. As such plates or tablets engage the inclined face of the ramps, they are progressively elevated with their advance movement to positions above their normal level. The inclined ramps 6 terminate at their forward ends in vertical faces 9. As each succeeding plate or tablet advancing up the inclined face of the ramp 6 reaches its forward terminal, such plate or tablet abruptly falls from its elevated position back to its normal level, thereby exposing above its top margin the face of the next succeeding plate or tablet 8. Upon release of the elevated ramps by the hand of the operator, such ramps will fall to their normal position permitting the drawer to be returned to closed position. A slight advance movement of the drawer after the ramps are released by the operator's finger will have the effect of forcing the ramps downwardly about their pivotal connection with the cabinet, thus freeing them from the drawer and its contents preparatory to return movement of the drawer. Likewise, when examining the plates or tablets within the drawer, if a desired tablet or plate is passed and one wishes to return to such plate, the swinging ramps are momentarily released while the drawer continues a short forward movement. This causes the ramps to be deflected downwardly by the pressure of the plates or tablets upon the cam face, whereupon the drawer may be returned into the cabinet through any desired distance of movement, and the ramps again elevated preparatory to another forward movement of the drawer to again elevate a desired succession of plates or tablets.

While the construction in Figs. 1 to 4 inclusive is the preferred form of device for permanent installation, there is shown in Fig. 6 an independent device interchangeable from one drawer to another. This interchangeable ramp device is especially desir-

able for use in connection with existing file cabinets for storage of plates or tablets. The interchangeable device comprises a supporting plate 10 which may be provided with a suitable handle, but for economy of manufacture, has been shown flanged downwardly and then forwardly at its forward portion to afford a convenient shape for grasping in the hand of the operator. This supporting plate 10 is provided with spaced ramps or cams 11, corresponding to the ramps 6 before mentioned. Such ramps or cams 11 are stationarily and fixedly secured upon the plate 10. These ramps 11 are positioned to agree with the slots 4 in the bottom of the drawer 2. In operation, the rear portion of the plate 10 is thrust within the cabinet 1 beneath the drawer 2, as shown more particularly in Figs. 7 and 8. The drawer is first partly opened as shown by dotted lines in Fig. 8, to provide clearance for the elevated plates or tablets. The plate 10 is then thrust into the drawer opening beneath the partially opened drawer with the ramp extensions or cams 11 projecting into the slots 4 of such drawer. The degree of insertion is limited by lateral shoulders 12 upon the plate 10. The plate being manually held in this position, the drawer 2 is drawn out of the cabinet. This causes the plates or tablets to progressively ride over the ramps or cam extensions 11 as shown more particularly in Fig. 7. Each plate or tablet as it reaches its topmost position at the forward end of the ramp, falls abruptly back to its normal level thereby exposing to view the face of the next succeeding plate or tablet 8.

The term laminæ is employed herein and in the following claims as a generic term to include printing plates, stencils, cards, frames or holders vertically disposed side by side in continuous succession and independently movable. In Fig. 9 there is shown a simple form of device in which the ramps 6 are formed by upturning the tapered ends of the intermediate tie portion 7 which may be hinged to the cabinet. This permits the use of slots of less width, decreases friction of the plates on the ramps and reduces cost of manufacture. The portion 7 is indented to enable the index of the next lower drawer to be seen. While the device shown in Fig. 9 may be mounted upon the cabinet, as an alternative construction the ramps 6 and intermediate tie plate 7 may be hinged to the top margin of the next lower drawer, as is illustrated in Fig. 9. In this construction, each drawer except the topmost of the series would carry the elevating device for operative engagement through the bottom slots of the next higher drawer.

It is also obvious that in lieu of projecting through slots in the bottom of the drawer, the swinging ramp device may be made sufficiently wide to straddle the drawer from the bottom and sufficiently high to project above the side margins of the drawer into engagement with shoulders or lugs formed on the terminal ends of the plates. There are numerous manners in which the device may be applied.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means and construction herein disclosed comprise the preferred form of several modes of putting the invention into effect and the invention is, therefore, claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:—

1. In a display apparatus for cards, plates, tablets and the like, a cabinet, a reciprocatory storage drawer therein, in which the members to be displayed are vertically arranged, said drawer having in its bottom a longitudinal slot extending transversely of the members, a ramp engageable with the cabinet beneath the drawer and insertable through the slot into engagement with the members to be displayed over when the members are drawn by relative longitudinal movement of the drawer, the successive engagement of the members with the elevating member operating to project such display members one above another into view beyond the face of the cabinet.

2. The combination with a file cabinet having a storage drawer therein for vertically disposed independently movable laminæ, of an inclined ramp member pivotally mounted upon the cabinet and engageable with the laminæ within the drawer through the bottom of such drawer, over which the laminæ are caused to climb as the drawer is opened, such ramp being movable about its pivotal connection out of the path of the drawer to permit return movement thereof.

3. The combination with a drawer for vertically disposed independently movable laminæ and a housing therefor, of an inclined ramp member supported upon the housing and projecting through the bottom of the drawer into the path of movement of the laminæ as the drawer is shifted, over which the laminæ ride to present the faces thereof successively to view.

4. The combination with a drawer for ver-

tically disposed independently movable laminæ and a housing therefor, of a pair of inclined ramps pivoted to the housing and adapted to project thru the bottom of the drawer into the path of movement of the laminæ when elevated, a transverse bar connecting the ramps of such pair and engaging the drawer when elevated to limit the elevation of the ramps, said ramps being subject to manual elevation, said laminæ being caused to progressively ascend the ramps by the movement of the drawer to expose to view the faces of succeeding laminæ.

5. The combination with a drawer for vertically disposed independently movable laminæ and a housing therefor, of a pair of interconnected inclined ramps capable of being positioned in such relation with the drawer as to progressively engage the laminæ as the drawer is shifted, whereby the laminæ are caused to progressively ascend the ramps by the movement of the drawer to expose to view the faces of succeeding laminæ.

In testimony whereof, I have hereunto set my hand this 20th day of December, A. D. 1928.

RODNEY J. WOOD.