

UNITED STATES PATENT OFFICE

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ROD FOR CARD-INDEXES.

SPECIFICATION forming part of Letters Patent No. 711,110, dated October 14, 1902.

Application filed February 17, 1902. Serial No. 94,387. (No model.)

To all whom it may concern:

Be it known that I, DAVID E. HUNTER, a citizen of the United States, and a resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Rods for Card-Indexes, of which the following is a specification.

My invention relates to card holding and releasing devices for card-index systems; and it consists of the improvements hereinbelow described.

In the drawings hereto annexed, which illustrate an embodiment of my invention, Figure 1 is a vertical longitudinal section of a drawer or case containing my improved card-holder. Figs. 2 and 3 are sectional views taken on the line 2 2 of Fig. 1 looking in a direction indicated by the arrows and showing in detail the card-rod actuating and guiding devices in card-holding and card-releasing position, respectively. Fig. 4 shows the card-holding rods in cross-section in their relation to a card; and Fig. 5 is a section taken in Fig. 1 along the line 5 5 looking in the direction of the arrows, showing in detail the rod supporting and guiding devices at the rear of the drawer.

A is the bottom of the drawer or case, B the front, and C the rear thereof.

Cards are stacked in the drawer in the usual manner, each card M (shown partially in Fig. 4) being provided with an opening m , which has a constricted neck m' . The card-rods H H' secure or release the cards, according to their position in the aperture m or its constricted neck m' .

The card-holding devices consist of flat rods H H', which at their ends are angularly bent, as at h h' , at the front of the drawer and at h^6 h^7 at the rear of the drawer. The middle portions of the rods H H' are in operative relationship with the cards M, and when in card-securing position lie horizontally edge to edge, thus presenting a large horizontal surface, and yet requiring very little vertical space for their accommodation in the apertures m of the cards.

Aside from the specific mechanism by which I have shown the card-rods H H' as operated,

the movement of these rods from card-securing to card-releasing position is such that the upper faces of the rods are folded together simultaneously with the lowering of both rods bodily to card-releasing position.

In Fig. 4 the two extreme positions of the rods H H' are shown, the full-line section indicating them in their card-securing position and the dotted lines indicating them in their lower and card-releasing position. It will be observed at once that this peculiar movement of the card-rods H H', wherein their contiguous edges move downward while their outer edges approach each other, enables me to secure the necessary change in position in the smallest possible aperture in the cards themselves, while at the same time the card-rods H H' present a large and effective surface when in securing position. Moreover, the fact that the card-rods are lowered bodily in the act of bringing their upper faces into contact with each other involves a movement of the rods into the constricted neck m' of the aperture m , so that when the card is removed the rods H H' are already located in the neck portion of the aperture, so that there is no danger of collision between the rods and the corners of the aperture m where the latter widens out from the neck m' . I have indicated in Fig. 4 by the dotted line m^2 m^3 the contour of the opening m appropriate to an arrangement whereby one only of the rods H H' (in the case shown the rod H') may be employed instead of a pair, the shifting movement of the rod H' enabling me to employ the large horizontal surface of a rod for card-securing purposes consistent with ease and safety in withdrawing a selected card.

The specific manner in which I accomplish the above-described movements of the rods H H' is as follows: On the inside of the front B of the drawer I secure the rod-shifter F, which is pivoted at f' . Pins h^2 h^3 , secured to and projecting from the shifter F, fit loosely in corresponding holes at or near the contiguous edges of the rods H H', respectively. Hangers G G', pivotally secured at g' to the front B of the drawer, are provided at their lower ends with pins g^2 g^3 , which fit loosely in corresponding holes in the outer edges of

the rods H H' where the latter are bent down at $h h'$. A slot f^2 is cut in the shifter F and receives the eccentric-pin d^7 , which in turn is carried by the actuating-shaft D'. At the rear end C of the drawer I provide supporting and guiding devices for the rods which correspond in mechanical movement with the shifter and hangers at the front B of the drawer. These supporting and guiding devices are shown in Fig. 5 and consist of a guiding-lever L, pivoted at l and furnished with pins $l' l^2$, which loosely fit in corresponding holes at or near the contiguous edges of the rods H H'. Hangers K K', pivotally secured to the back C of the drawer at k , are furnished at their lower ends with pins $h^4 h^5$, which fit loosely in corresponding holes in the outer edges of the rods H H' where the latter are turned down, as at $h^6 h^7$.

The actuating devices are located at the front B of the drawer and consist of the turning-handle D, mounted on or integral with the actuating-shaft D', which fits in the sleeve or bushing E, the bushing E being secured in the aperture b' in the front B of the drawer by means of a screw e' .

The bushing E at its rear end is cut away on one side from the face rearward, and thus provides the stop-surfaces $d^5 d^6$, which cooperate with the pin d^3 , secured to the actuating-shaft D', and thus limit the turning movement of the shaft D' to about a half-revolution. The shaft D' is reduced in diameter at its middle portion d' to accommodate the spring d^2 , which by its securement to the shaft D' and the bushing E constantly urges the shaft D' to the position in which the stop-pin d^3 rests against the stop d^5 , this position corresponding to the card-holding position of the flat rods H H'. The operation of the above-described devices is as follows: When the handle D is turned, as indicated by arrow in Fig. 1, the spring d^2 yields, and the pin d^7 , acting in the slot f^2 of the shifter F, causes the latter to turn downward on its pivot f' , which is at such a distance from the rod-actuating and supporting pins $h^2 h^3$ that the movement of the latter is substantially in a straight line. Thus the inner contiguous edges of the rods H H' are moved downward together, while the outer edges of these rods are sustained by the hangers G G', which swing together to the position shown in Fig. 3, carrying the rods H H' therewith. The upper faces of the rods are folded together, the rods being lowered bodily below their former position. The device of bending or twisting the outer ends of the rods H H' assists the action of the hangers G G' in that the pins $g^2 g^3$ are not brought directly over the pins $h^2 h^3$, and consequently the downward movement of the shifter F constantly exerts an effective inward pull upon the pins $g^2 g^3$. The supporting and guiding devices at the rear end of the drawer (shown in Fig. 5) follow and copy the movements of the actuating and guiding devices (shown in Figs. 2 and 3) which

operate at the front of the drawer. The relationship of the rods H H' to the cards M and their lower edge aperture m has been described above in connection with Fig. 4.

What I claim, and desire to secure by Letters Patent, is—

1. In a card-holder, the combination of a pair of flat rods, lying edge to edge in card-securing position, and means for simultaneously folding the upper faces of the rods together and lowering the rods bodily to card-releasing position, substantially as described.

2. In a card-holder, the combination of a flat card-securing rod, lying in a horizontal plane in card-securing position, and means for simultaneously turning the rod to a vertical position and lowering the rod bodily, substantially as described.

3. In a card-holder, the combination of a pair of flat card-securing rods, lying edge to edge in card-securing position, a rod-shifter, connections therewith to the contiguous edges of the rods, rod-hangers, connections therewith to the outer edges of the rods, and means for actuating the shifter, substantially as described.

4. In a card-holder, the combination of a pair of flat card-securing rods, lying edge to edge in card-securing position, a rod-shifter, connections therewith to the contiguous edges of the rods, means for actuating the shifter, and a controlling-spring, whereby the shifter and rods are normally held in card-holding position.

5. In a card-holder, the combination of a pair of flat card-securing rods, lying edge to edge in card-securing position, a rod-shifter, connections therewith to the contiguous edges of the rods, rod-hangers, connections therewith to the outer edges of the rods, a shaft, connections therewith to the shifter whereby the latter is actuated, and a stop whereby the turning movement of the shaft is limited, substantially as described.

6. In a card-holder, the combination of a pair of flat card-rods, having their outer edges bent downward at the ends, a rod-shifter, connections therewith to the contiguous edges of the rods, rod-hangers, connections therewith to the downwardly-bent outer edges of the rods, and means for actuating the shifter, substantially as described.

7. In a card-holder, the combination of a pair of flat card-rods, lying edge to edge in card-securing position, a rod-shifter and rod-hangers at the operating end of the rods, means for actuating the shifter, and supporting and guiding devices at the other end of the rods which correspond in mechanical movement with the shifter and hanger at the operating end, substantially as described.

Signed by me at Boston, Massachusetts, this 12th day of February, 1902.

DAVID E. HUNTER.

Witnesses:

EB GRALL,
FRANK S. HARTNETT.