

Aug. 5, 1924.

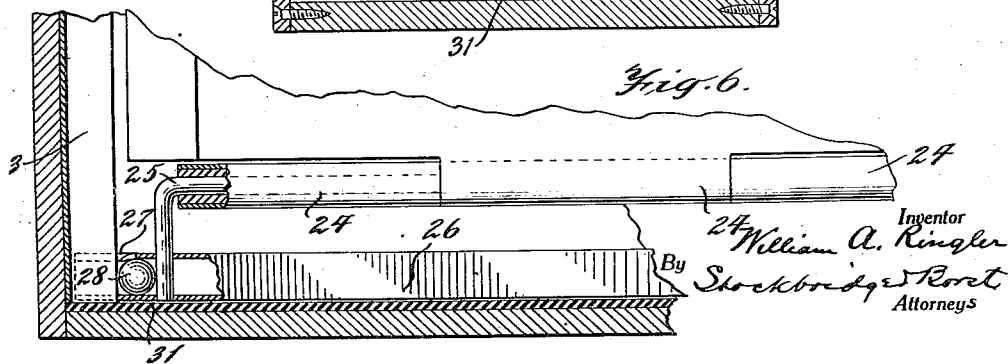
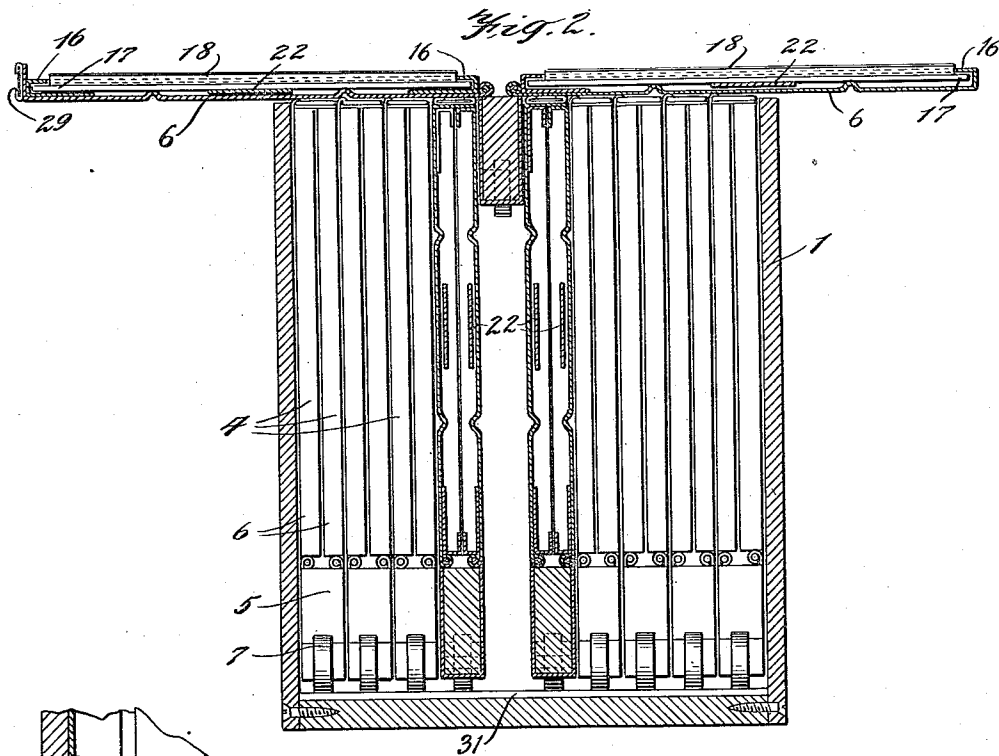
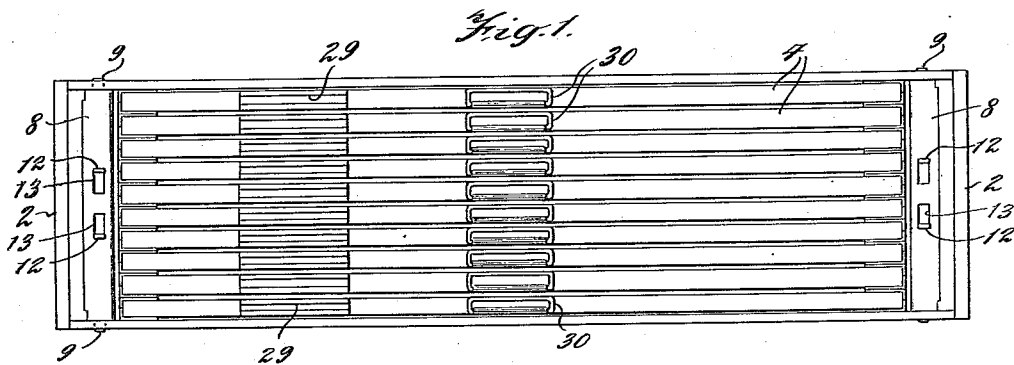
1,503,557

W. A. RINGLER

INDEX DEVICE

Filed March 9, 1922

2 Sheets-Sheet 1



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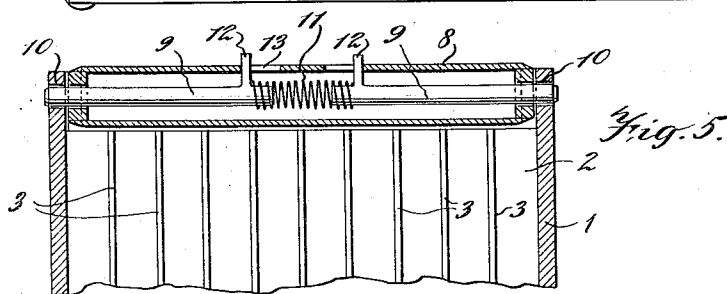
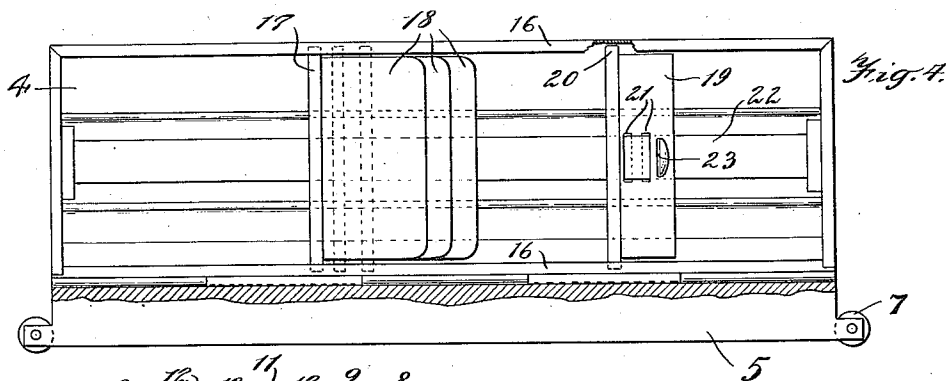
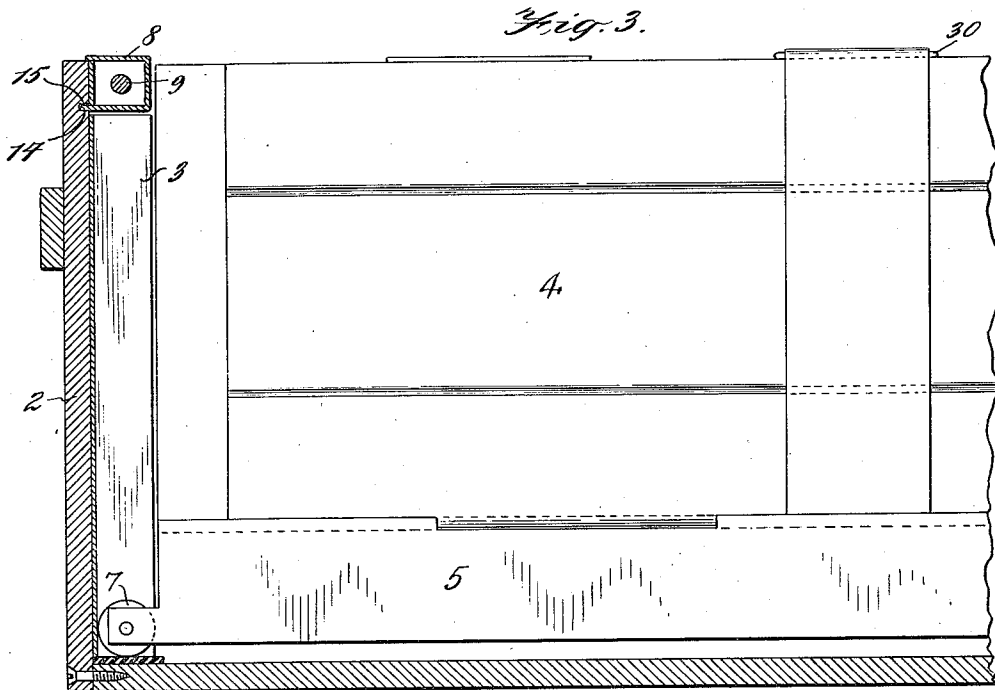
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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INDEX DEVICE.

Application filed March 9, 1922. Serial No. 542,512.

To all whom it may concern:

Be it known that I, WILLIAM A. RINGLER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Index Devices, of which the following is a full, clear, and exact description.

This invention relates to card index devices of the so-called visible index type in which a series of index cards are supported in a frame with the free edges of the cards projecting beyond one another so as to leave a narrow portion of the face of each card exposed along its free edge, which portion is adapted to carry the name, address, identification number or other suitable information or data in a position to be always visible.

An object of the invention is to provide an improved index device of this type with which a maximum possible number of index cards may be mounted within a minimum of space; with which any card, may be almost instantly accessible for inspection of, or the making of changes in, the information carried thereby; with which the cards may be disposed in horizontal vertical or inclined positions; with which the index cards may be removed, rearranged or interchanged at will; with which ready access may be had to both faces of every card for the purpose of obtaining information therefrom or entering additional information thereon, and which is attractive in appearance, compact, convenient in use, and simple and inexpensive in construction. Other objects and advantages will be apparent from the following description of embodiments of the invention and the novel features will be particularly pointed out in claims.

In the accompanying drawings:

Fig. 1 is a plan of an index device constructed in accordance with my invention;

Fig. 2 is a transverse sectional elevation of the same with one of the units pulled out in a position to permit access to the index cards;

Fig. 3 is a sectional elevation of a portion of the same;

Fig. 4 is a sectional elevation of one of the units;

Fig. 5 is a sectional elevation of one end of the frame showing the guides and a stopping element; and

Fig. 6 is a fragmentary sectional elevation of a modified type of unit.

In the embodiment illustrated in Figs. 1 to 5, a box like frame 1, having an open face is provided with end walls 2 having on the inner faces thereof guide plates 3 extending into the frame from the open face. A plurality of index units 4 are mounted for sliding movement between the guide plates into and out of the frame through the open face thereof, the units of the type illustrated moving edgewise into and out of the frame. Each of these units comprises an anchoring or guiding member 5 which extends from end to end of the frame and is slidable in the spaces between the guide plates 3 of the end walls and a pair of index frames 6 abutting face to face and hinged to the member 5. Each pair of frames 6 is arranged to abut edgewise with an anchoring or guiding member 5 and each frame is hinged to its member 5 along the outer face of the index frame at the edge abutting the anchoring member. These units may be pulled out and pushed into the frame through the open face thereof, the guiding members 5 sliding between the guiding plates 3 during this operation. The ends of the guide member may be provided with suitable anti-friction devices 7 which as shown, may comprise small rollers 7 which have rolling contact with the end walls of the frame and reduce the friction of the sliding movement and also prevent sticking of the units while being pulled out or pushed into the frame. A stopping element 8 is disposed at each end of the frame across the upper ends of the guide plates 3 and between the side walls of the frame so as to limit the upward movement of the units. This stopping element may merely comprise a hollow casing having spring bolts 9 slidably projecting through the ends thereof into apertures 10 in the side walls of the frame. A single helical spring 11 acting between the inner ends of the bolts 9 serves to normally stress these bolts outwardly to cause the same to enter and remain in the apertures 10 of the frame. The bolts are provided with lugs 12 which project through longitudinally extending slots 13 in a wall of the stopping element, for manual engagement to retract the locking bolts into the casing of the stopping element and release the stopping element from engagement

ment with the frame. Each stopping element is provided along at its lower outer edge with a tongue 14 which is adapted to enter a recess 15 in the adjacent end wall of the frame and partially relieve the locking bolts 9 of the force imparted thereto by the engagement therewith of the members 5 when the units are pulled outwardly to the limit of their movement. When each unit has been pulled outwardly through the open face of the frame to the limit of its movement, the card frames are adapted to swing about their hinges in opposite directions, book fashion, as shown in Fig. 2. The inner abutting faces of the frames are then readily accessible. Each of these card frames comprises a shallow rectangular box having a peripherally inturned flange 16 the opposite side flanges of which form guideways in which the index cards are supported. A plurality of card carriers 17 are supported in the guideways in the frames and each carrier is provided with an index card 18 for receiving suitable data or information. To remove a carrier 17 it is merely necessary to move the adjacent carriers a short distance away along the guides and then shift the particular carrier to a diagonal position which will bring the ends of the carrier out of the guideways and permit of its removal. It is reapplied in a similar but reverse manner. The cards and their carriers are normally held together and against one end of the frame by means of a slidable holding block 19 which is provided with extensions 20 that project into and slide in the guideways of the frame. The holding element 19 is provided with a pair of apertures 21 which extend transversely to the guides of the frame and are spaced apart in the direction of sliding movement of the block. A flexible strip 22, preferably of spring steel, passes through both of the apertures of the block and the ends of the strip are connected to the ends of the frame. Thus sufficient friction is provided between the strip 22 and the block 19 to hold the latter in various adjusted positions in the frame. The block is also provided with a slot 23 which provides a finger-engaging edge to be engaged when the block is to be shifted along the guideways.

In the embodiment illustrated in Fig. 6 the card frames are hinged together by aligned tubes 24 which are locked together by a common pin or rod 25. The ends of the pin 25 are bent at right angles thereto and are connected to an anchoring member 26 having a slot 27 in each end thereof which receives one of the guide plates 3. A roller or ball bearing 28 may be interposed in each end of the member 26 at the inner end of the slot 27 for rolling engagement with the edge of the co-operating guide plate 3 so as to reduce the friction and also pre-

vent sticking when the units are pulled outwardly. The upper or outer edge of each of the units is provided with a suitable frame 29 for receiving and holding a card or tag by which the range of cards in each unit may be indicated without the necessity of opening the unit. Handle loops 30 are also provided upon the upper edges of the units by means of which the units may be pulled outwardly and opened as illustrated in Fig. 2.

In use, each index frame is provided with a full set of card carriers 17 and cards 18 which are held together and against one end of the frame by means of the adjustable sliding block 19. The carriers 17 do not overlap in the guides of the frame so that a portion of the face of each of the cards 18 along its free edge will always be visible and upon which the name, number or other identifying insignia may be placed in order that quick reference to any particular card may be had. The two card frames of each unit fold together, book fashion, through their hinged connection to the anchoring or guiding member 5 or 26 and are inserted edgewise into the frame so as to be entirely encased therein. When one desires to refer to the cards in any unit, the handle loop 30 of that unit is grasped and through it, the unit is pulled outwardly as far as possible at which time the card frames may be separated, book fashion, as shown in Fig. 2. The cards are then exposed for reference and access and after the desired data or information has been obtained therefrom or entered thereon the open frames may be folded together through the hinges and the entire unit pushed back into the frame. During the movements of the units into and out of the frame, the anchoring or guide members 5 will limit the outward movement and the rollers 7 will prevent sticking. If for any reason the entire frame is not filled with units the guide plates 3 will retain those which are in the case in proper sliding relation at all times. The engagement of the anchoring member 5 with the under faces of the stopping elements 8 limits the outward movement of each unit, but if it is desired to entirely remove a unit from the frame, the stopping elements are removed from the frame by pressing the lugs 12 of each element together, which act retracts the locking bolts 9 from the apertures 10 of the frame and releases the element. Any unit may then be removed or new units may be inserted. Rubber pads 31 may be placed in the bottom of the frame upon which the units will strike at the limit of the inward movement in order that the manipulations of the units may be made as silent as possible.

It will be obvious that the frame 1 may be disposed with the open face horizontal,

vertical, or in any inclined position, and in each of these positions the operation of the units to provide access to the cards carried therein will be very convenient. It will be understood that various changes in the details and arrangements of parts herein described and illustrated, for the purpose of explaining the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention.

I claim:

1. In an index device, a supporting frame, a plurality of anchor members slidable in parallel directions in said frame, and a pair of card index frames hinged to each of said members with the card-mounting faces thereof abutting when the index frames are brought together about their hinges, said pairs of frames being slidable individually into and out of the supporting frame.

2. In an index device, a supporting frame, a plurality of anchor members slidable in parallel directions in said frame, a pair of card index frames hinged to each of said members with the card-mounting faces thereof abutting when the index frames are brought together about their hinges, said pairs of frames being slidable individually into and out of the supporting frame, and means for limiting outward movement of the members with the card frames beyond a point at which the pair of card frames may be swung apart to expose and render the cards readily accessible.

3. In an index device, a supporting frame having an open face, a plurality of index units slidable edgewise into and out of the frame through the open face, each unit comprising a guiding member and a plurality of index frames hinged to said member to permit the card index frames to be brought together or opened like a book, each index frame having upon the face abutting the face of another frame that is attached to the same guiding member means for interchangeably mounting a plurality of index cards with a portion of a face of each card always visible when the index frames are separated.

4. The index device as set forth in claim 3, and means normally preventing complete removal of the guiding member from the frame but permitting movement sufficiently to allow the index frames to swing apart when pulled to the outer limit and expose the index cards to view.

5. In an index device, a cabinet, a pair of index card frames, abutting face to face, a member disposed along two adjacent sides of the pair of frames and having a limited outward sliding movement in the cabinet, and hinges connecting said frames along

their outer faces to said member to permit the frames to separate book fashion when pulled outwardly to the extent permitted by the member and expose the abutting faces, each frame upon the face abutting the other frame having means to support a plurality of index cards with a portion of a face of each card always visible.

6. In an index device, a supporting frame having an open face and guides at opposite ends extending from near the open face into the frame, index units guided for sliding movement by said guides into and out of the frame, one of the walls beyond the outer ends of the guides having an undercut shoulder, bars extending across the ends over the guides at the open face for normally preventing complete removal of the units from the guides, the bar at the end with the undercut shoulder having a tongue engaging beneath the shoulder to take up a portion of the stress set up by the engagement of a unit with the bar and additional means for securing the bar with the tongue to the frame.

7. In an index device, a supporting frame having an open face and guides extending from near the open face into the frame, index units movable into and out of the frame through the open face and having extensions running in said guides and serving to guide the units in their in and out movement, stopping elements extending across the outer ends of the guides to limit outward movement of the extensions of the units through the open face, said elements having spring bolts adapted to interlock with the frame to permit removal of the same from the frame whereby the index units may be removed from the frame or replaced therein.

8. In an index device, a supporting frame having an open face and guides extending from near the open face into the frame, index units movable into and out of the frame through the open face and having extensions running in said guides and serving to guide the units in their in and out movement, stopping elements extending across the upper ends of the guides to limit outward movement of the units through the open face, said elements having spring bolts adapted to interlock with the frame to permit removal of the same from the frame whereby the index units may be removed from the frame or replaced therein, said elements each also having a tongue interlocking with the frame to relieve the spring bolts of a portion of the stopping stress.

In witness whereof, I hereunto subscribe my signature.

WILLIAM A. RINGLER.