March 12, 1929. W. A. HARDY 1,704,892

INDEX DEVICE

Filed March 17, 1922 3 Sheets-Sheet 1

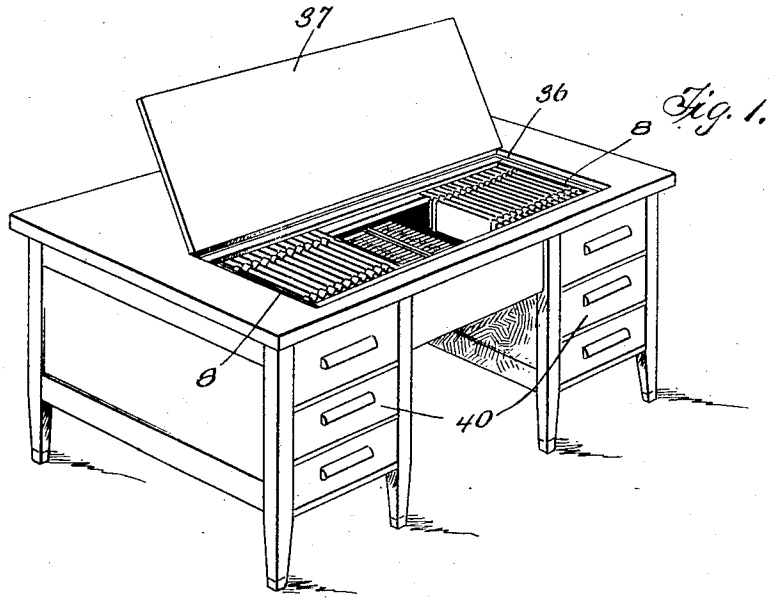
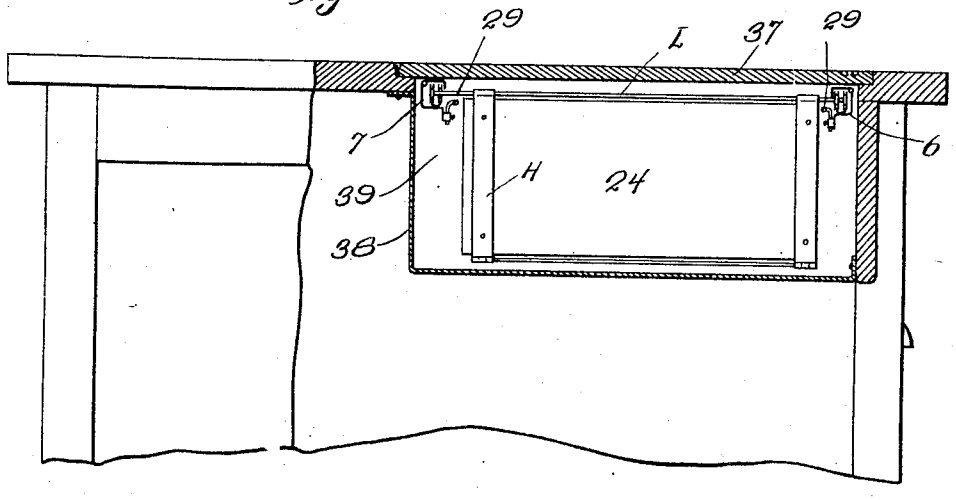


Fig. 1.

Fig. 2.



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Fig. 3.

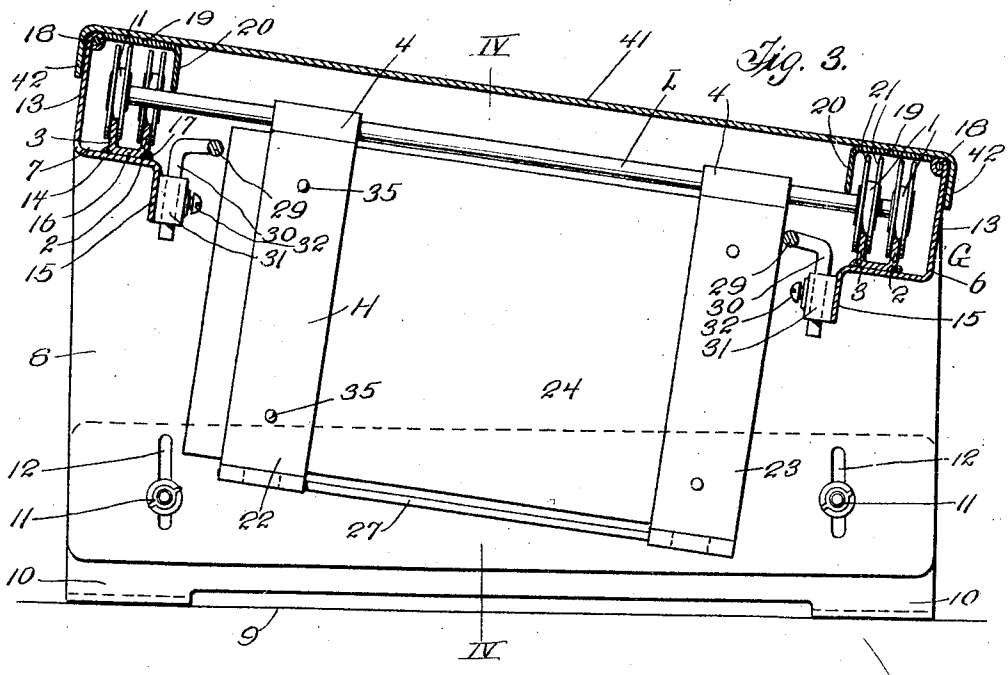
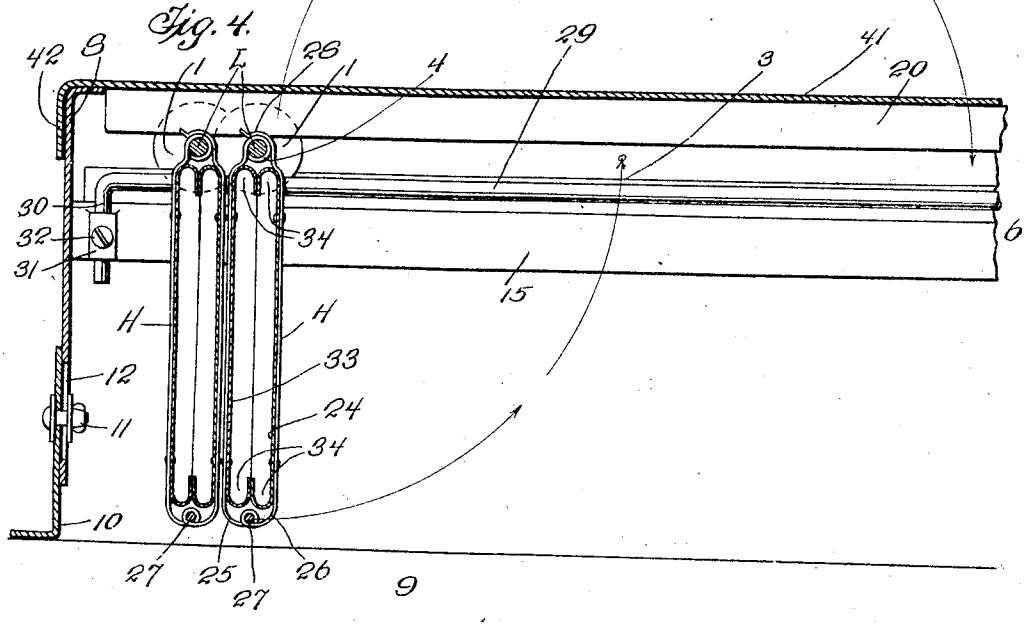


Fig. 4.



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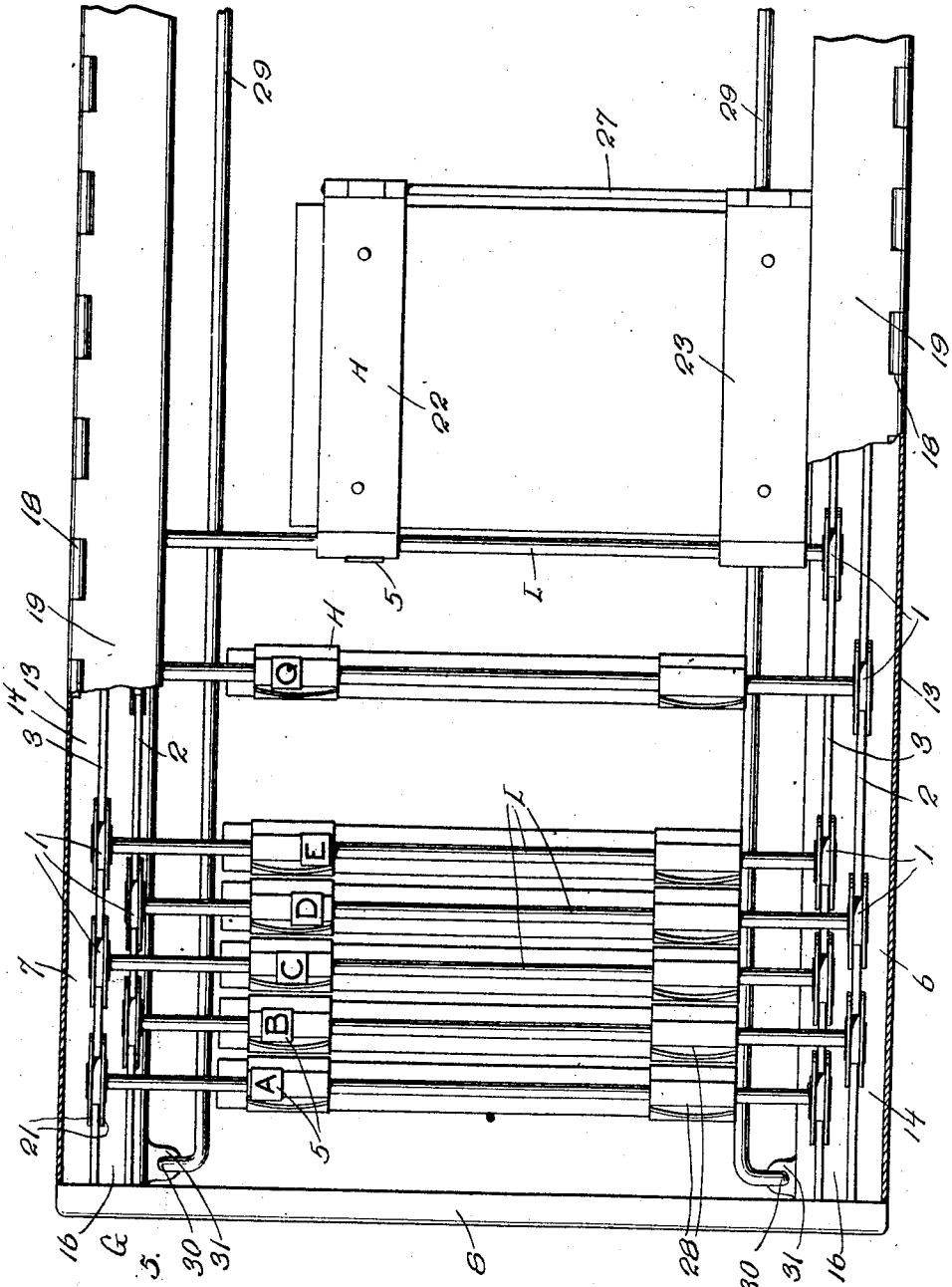


Fig. 5.

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Patented Mar. 12, 1929. 1,704,892

UNITED STATES PATENT OFFICE.

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INDEX DEVICE.

Application filed March 17, 1922. Serial No. 544,440.

This invention relates to an index device, and has for its object to provide a device of this character capable of containing a very great amount of data, or like material, in a minimum of space and readily accessible in detail.

A further object is to provide a device, as indicated, which may be constructed either as a separate article of office furniture, or as a built-in part of a desk, table, or the like, and which in either instance may, when not actually in use, provide a smooth substantially horizontal surface suitable for table or desk purposes.

A further object is to so construct the device that it may serve equally well for the support of either memoranda books, pads, index cards or like articles or devices which are intended to carry data or the like material for ready reference.

A further object is to provide means whereby any one or more of the carrying devices employed may be readily inserted or removed as occasion may require.

A further object is to provide means whereby suitable adjustments may be readily made to adapt the device for carrying reference books, cards, or the like, of different sizes.

A further and more detailed object is to provide a device particularly adapted for the support of a number of index card carrying plates of the type illustrated in my pending application, Serial No. 459,882, and for so supporting said plates that any one thereof may be quickly and accurately selected and its multitude of reference cards at once exposed for inspection.

A further object is to construct the device so that it will be simple and attractive in appearance and substantial and practical in its construction and operation.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles, constituting the invention, and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawings which are to be taken as a part of this specification, and in which I have shown merely a preferred form of embodiment of the invention:—

Figure 1 is a perspective view of an office desk showing the same to be equipped with a device of this invention.

Figure 2 is a transverse vertical sectional view thru a portion of the desk of Fig. 1, illustrating the relative arrangement of parts of this device and of the desk.

Figure 3 is a transverse sectional view thru a device constructed in accordance with this invention, and showing the same as adapted for use apart from the desk structure.

Figure 4 is a vertical sectional view taken substantially upon the plane of line IV of Fig. 3, and

Figure 5 is a top plan view of the structures seen in Figs. 3 and 4.

The exemplary embodiments of the invention as illustrated in the drawings include essentially a plurality of supporting rods L having rollers 1 at their opposite ends arranged to travel along tracks 2 and 3 supported by a suitable frame-work indicated generally by the reference character G.

The supporting rods L stand substantially parallel to each other, are free to roll independently along the tracks, and each supports what may be conveniently termed a carrier H, the various carriers being so connected with the rods as to allow the carriers to hang by gravity downwardly from the rods while the rods rotate freely in suitable bearing parts, as 4, formed upon the carriers.

The carriers preferably have associated therewith index tabs or like devices, as 5, for identification purposes.

When it is desired to inspect the contents of any one of the carriers such carrier is simply swung about its supporting rod and into a horizontal position where it may be opened and its whole contents inspected at a glance. When the inspection has been completed the carrier is dropped again to its vertical position and any other carrier lifted for inspection as desired.

The various parts may be constructed in any desired manner but as illustrated the frame G consists of front and rear track-supporting members 6 and 7 respectively, and connecting end members 8. Where the device is intended for use as a separate article of manufacture, as in Figs. 3 and 4, the end members 8 extend downwardly below the side members so that they may constitute legs to support the device above a table surface, as 9. When desired the end members may be provided with separately formed ex-

tension parts 10 slidably connected in position, as by means of bolts 11 and slots 12, so that the height of said end members may be adjusted at will to properly accommodate carriers H of different widths.

The front and rear members 6 and 7 are of identical construction and each consists preferably of a strip of sheet-metal bent longitudinally to provide an outside wall 13, a bottom wall 14 and a pendent stiffening flange 15.

The bottom wall 14 constitutes a ledge upon the upper surface of which is provided the tracks 2 and 3 which, in the instance illustrated, are formed from a strip of sheet-metal having its opposite longitudinal edges bent upwardly into parallelism, one of said upwardly bent edges providing the track 2 and the opposite edge providing the track 3. The intermediate portion, as 16, is rigidly connected with the wall 14, as by means of solder or other device, as indicated at 17.

Pivotally connected at the upper edge of the outside wall 13, as at 18, is a separately formed flap 19, having an edge flange 20. This flap is adapted to swing into and out of position covering and substantially concealing the rollers 1 and serving to hold said rollers against accidental displacement from the tracks. Yet, whenever it is desired to remove one of the supporting rods L from the device the flaps may be swung out of the way and said rod and the parts supported thereby readily removed, or others inserted, whereafter the flaps will be returned to covering position for restoring the device to its proper pleasing and attractive appearance. These flaps also serve as guard members for preventing contact of the user's hands with the rollers. Also, as rests upon which the hands, or arms, may engage when the device is in use.

The purpose of providing two tracks upon each of the side members is clearly indicated particularly in Fig. 5 of the drawings; namely, to permit of the use of relatively large rollers and yet to enable the rods L to be brought into suitably close proximity to each other. In other words, to enable suitably close nesting of the carriers H against each other when hanging from their respective supporting rods.

The size of the rollers is increased by reason of the presence of broad flanges 21 thereon which are important in that they serve to straddle and fit upon the tracks so as to operate for preventing likelihood of the rods moving in other than substantially parallel relation to each other. By engaging opposite side surfaces of the tracks the flanges serve to hold the rods at substantially right angles to the tracks at all times and thus to prevent one end of a rod moving in advance of the other end.

The flaps 19 engage either or both the rods and the rollers in a manner to retain the flanges against lifting out of engagement with the tracks.

The carriers H illustrated each consists of a pair of yokes 22 and 23 constructed so as to make up a sort of skeleton satchel within which is carried one or more books, plates or other index-containing devices 24. These yokes are shown to consist each of a pair of members 25 and 26 pivotally connected together at their lower ends by a pivot rod 27. The upper ends of the members 25 are shaped to provide the bearings 4 while the upper ends of the members 26 are shaped to provide a form of spring catch 28 arranged to interengage with the member 25 for holding the two members in what may be termed their collapsed position; that is, closed against each other as when not in use.

The catches 28 may be disengaged whenever desired so that the carrier may be swung open for inspection.

The bearings 4, in addition to providing free rotation of the rods relative to the carriers, also provide for free longitudinal movement of the carriers along the rods.

Before opening a carrier it should be swung to a horizontal position as above mentioned, and then allowed, or caused, to slide slightly along the length of its supporting rod for resting upon a bracket 29 arranged to receive and to hold it in horizontal position while open.

The bracket 29, in the structure disclosed, consists of a bar extending longitudinally of the device and parallel with the track in a position below the rods L. This bar is provided with one or more supporting standards 30 which are received within sockets 31 carried by the adjacent flange 15 of the front side member 6.

It is desirable that the level of the bracket bar 29 may be altered upon occasion in order to properly support carriers of different thicknesses and for this purpose the standards 30 are adjustable within the sockets 31, and are adapted to be held in any adjusted position by means of a suitable retaining device as represented by the set screw 32.

When a carrier has been swung to horizontal, or "operative" position, it may be readily slid along its supporting rod to position over the bracket bar and after the desired examination has been made of the contents of the carrier the carrier may be as readily slid back again free of the bracket bar and allowed to swing to its vertical or "inoperative" position.

It may be noted in this connection that the flange 20 of the front flap 19 constitutes an abutment surface operating to stop movement of the carrier in operative position above the bracket bar.

If desired the bracket bar, and its associated elements, may be duplicated upon the

rear side member 7 whereby to enable the carriers to be supported in operative position by being slid either upwardly or downwardly as may be preferred by the user.

As previously mentioned the index devices 24 herein illustrated are of the type shown in my pending application referred to and briefly described consist each of a plate 33 having opposite edge flanges forming runways 34 extending between which are retained the index elements proper, consisting of a number of cards or papers upon which data may be written.

The plates 33 are shown to be connected with the members 25 and 26, by suitable rivets, or the like, as 35, and here is may be mentioned that in some instances the carriers may be made singly; that is, to carry only a single record device 24 instead of two record devices pivotally connected together as described. Also, that the devices 24 may consist simply of books and that these may be pivotally and slidably connected with the rods L in any suitable manner and be provided with appropriate devices for retaining them against unintentional opening.

As seen in Fig. 3, it is proposed in some instances to arrange the front and rear side members 6 and 7 so that one is slightly above the other, thus causing the supporting rods L to stand at an incline. By this means the carriers are given a tendency to slide downwardly along the rods and into engagement with the bracket bar 29 of the front member 6 so as thus to cause all of the carriers to stand in uniform relation to each other. Also, the carrier may be very easily slid into operative position above the bracket bar when desired for use as above described, and will more securely retain its operative position until positively slid upwardly again along the supporting rod.

When a selected carrier is to be swung upwardly from inoperative to operative position, of course the other carriers are slid along the tracks 2 and 3 so as to make room for the carrier which is being swung into operative position. Thus one or more of the carriers is being shifted back and forth along the tracks frequently during the use of the device, and the importance of the wide flanges on the rollers will thus be apparent for keeping the carriers parallel.

When the device is not desired for immediate use it may be covered and protected by a separately formed cover member 41 which rests upon the upper edges of the side members 6 and 7 and end wall members 8, and which has suitable marginal flanges 42 lapping said walls to hold the cover in position. This cover may readily be used as a writing desk surface, or for any other ordinary desk purposes.

When the device is to be used, or made up as a part of a desk structure, as illustrated in Figs. 1 and 2, the desk is formed with an opening 36 in its top surface fitted with a suitable lid, or cover, 37 which preferably can be swung into and out of position closing said opening so that whenever desired the desk may be used for ordinary desk purposes and yet upon occasion may be quickly transformed into an index device or filing cabinet.

A suitable casing 38 may be provided into which the opening 36 communicates and within which the index device, as already described, may be positioned.

Altho it will be apparent that the index device, constructed exactly as already described, may, if desired, be positioned within the casing 38 where it will be ready for convenient use whenever the lid 37 is opened, (in this case, of course, the cover 35 might be omitted), yet a somewhat more appropriate appearance may be obtained by mounting the front and rear side members 6 and 7 directly upon the desk structure; that is, upon the parts, as 39, forming the end walls of casing 38, and close up beneath the lid 37 so that the carriers, when in operative position, will stand as near as possible to the level of the upper surface of the desk.

Devices constructed in accordance with this invention may be made of any desired size according to requirements. The desk seen in Fig. 1, for instance, may contain an outfit either smaller or larger than that shown so that the containing casing 38 may extend over the drawer sections 40, or not. Also, a device built to accommodate a relatively large number of carriers H may actually contain only a relatively small number of carriers and such as are contained will be supported and may be used with the same efficiency and convenience as tho the full quota of carriers were present. Ample allowance may thus be provided for prospective expansion in the requirements of a growing business. Carriers may be inserted or removed at will. Carriers of one kind or size; that is, adapted for a certain use, may be removed and carriers of a different kind or size, adapted for another use, may be inserted. One whole set of carriers, containing what may be considered temporarily inactive data, may be removed and piled away to make space for the accommodation of an entirely new set of carriers containing so-called active data.

In removing the carriers, for purposes of substitution, or otherwise, the supporting rods and rollers of the respective carriers preferably are removed as one with the carriers. In fact these elements may be considered as parts of the carriers in this respect.

And here it may be mentioned that altho this device at present finds its most useful employment as a container for a great number of index references and the like, yet it is ob-

vious that the carriers may readily be designed so as to contain a miscellaneous assortment of papers, or the like, thus adapting the device for efficient use as a filing cabinet for papers and documents.

Wherever, therefore, the term "index" is herein employed, particularly in the claims, such term is intended to comprehend both index and filing devices.

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

1. A device of the class described comprising an index carrier, a pair of tracks, supporting means for said carrier having rolling engagement with said tracks, and said carrier having pivotal connection with said supporting means to at once permit rolling movement of the supporting means along said tracks and to allow the carrier to hang normally beneath said supporting means during such rolling movement, together with means by which to hold the carrier against rolling at will.

2. A device of the class described comprising an index carrier, a pair of tracks, supporting means for said carrier having rolling engagement with said tracks, and said carrier having pivotal and slidable connection with said supporting means adapted first, to permit the carrier to hang by gravity from the supporting means in an inoperative position during movement of the supporting means along said tracks, second, to permit swinging movement of the carrier relative to the supporting means into another position, and third, to permit sliding movement of the carrier along the support at will.

3. A device of the class described comprising an index carrier, a pair of tracks, supporting means for said carrier having rolling engagement with said tracks, and connections between the carrier and the supporting means of a character, adapted first, to permit the carrier to hang by gravity from the supporting means in an inoperative position during movement of the supporting means along said tracks, second, to permit movement of the carrier into another position, and third, to permit movement of the carrier into engagement with a part for preventing return of the carrier to its inoperative position.

4. In a device of the class described comprising a plurality of index carriers, a pair of tracks, supporting means by which the carriers are supported to roll along said tracks and to hang by gravity beneath said supporting means, index means for identifying the several carriers, the carriers being openable and constructed to permit ready inspection of their contents at will, together with means to hold the carriers in open position.

5. A device of the class described comprising a plurality of index carriers arranged in a row, four tracks arranged two tracks extending along each side of said row, supporting members for said carriers respectively having rolling engagement with said tracks, and the supporting member of adjacent carriers engaging different pairs of tracks substantially as and for the purpose set forth.

6. A device of the class described comprising an index carrier, tracks, a supporting rod for said carrier provided with means having rolling engagement with said tracks and along which rod the carrier is slidable, and a cover for said tracks having a part serving as limiting means to limit sliding movement of the carrier.

7. A device of the class described comprising a plurality of index carriers, tracks upon which the carriers are mounted to roll, a supporting frame for said tracks comprising opposite side pieces upon which the tracks are mounted and end pieces to which said side pieces are connected, and said end pieces having support-engaging extensions provided upon said end pieces, and means whereby said extensions are adjustably connected with said end pieces and by which the elevation of the tracks above the support may be altered at will.

8. A device of the class described comprising an index carrier, tracks, a supporting member for the carrier having rolling engagement with said tracks, and covering means for said tracks movable into and out of position retaining said supporting means in rolling engagement with the tracks.

9. A device of the class described comprising a carrier, an elongated supporting member for said carrier, connecting means between the carrier and the supporting member constructed to permit sliding movement of the carrier longitudinally of the supporting member, and said connecting means being constructed to hold the carrier suspended beneath the supporting member and to permit swinging movement of the carrier about the supporting member.

10. A device of the class described comprising a carrier, tracks, supporting means for the carrier including rollers by which the carrier may be moved from place to place along said tracks, the carrier being supported by said supporting means in a normal inoperative position suspended beneath said supporting means but said carrier and said supporting means being constructed to permit swinging movement of the carrier out of said inoperative position at will, together with means whereby the carrier may be held against return to said inoperative position.

11. A device of the class described comprising a carrier, supporting means for said carrier constructed to permit movement of the carrier bodily along said supporting means, said carrier and said supporting means be-

ing constructed also to permit manual swinging movement of the carrier about the supporting means, and means to support said supporting means and also adapted to retain the carrier in one of the positions to which it may be swung and bodily moved.

12. A device of the class described comprising tracks, a plurality of index carriers, supporting means whereby the carriers are independently supported upon said tracks and by which said carriers are adapted to travel along said tracks into and out of close proximity to each other to afford access to said carriers selectively at will, and means whereby any selected carrier may be caused to stand in an abnormal position with respect to the supporting means.

13. A device of the class described comprising tracks, a plurality of index carriers, independent supporting members one for each of said index carriers, means by which the index carriers are connected with the supporting members to hang by gravity vertically beneath their respective supporting members, said connecting means and supporting members providing for swinging movement of the index carriers from said vertical position to a horizontal position, means by which the supporting members are independently engaged with said tracks to permit movement of the carriers into and out of close proximity to each other, and means by which any selected carrier may be held in a horizontal position.

14. A device of the class described comprising tracks, a plurality of index carriers, independent supporting members one for each of said index carriers, means by which the index carriers are connected with the supporting members to hang by gravity vertically beneath their respective supporting members, said connecting means and supporting members providing for swinging movement of the index carriers from said vertical position to a horizontal position, means by which the supporting members are independently engaged with said tracks to permit movement of the carriers into and out of close proximity to each other, and means by which any selected carrier may be held in a horizontal position, said last-mentioned means including a member extending common to all of the carriers.

15. A device of the class described comprising tracks, a plurality of index carriers, independent supporting members one for each of said index carriers, means by which the index carriers are connected with the supporting members to hang by gravity vertically beneath their respective supporting members, said connecting means and supporting members providing for swinging movement of the index carriers from said vertical position to a horizontal position, said connecting means and supporting members also providing for sliding movement of the carriers upon the supporting members, means by which the supporting members are independently engaged with said tracks to permit movement of the carriers into and out of close proximity to each other, and means with which the carriers may be engaged as the result of swinging and sliding movement of the carriers to hold the carriers in a desired position.

16. A device of the class described comprising an index carrier, a pair of tracks, supporting means for the carrier having rolling engagement with said tracks, and connections between the carrier and the supporting means by means of which the carrier will hang normally by gravity from the supporting means in an inoperative position, said carrier by reason of said connections being manually movable into a different position with respect to the supporting means, and said carrier, by reason of said connections being also manually movable into engagement with a part for retaining it against return to normal position.

In testimony whereof I affix my signature.

WINFIELD A. HARDY.