Jan. 18, 1949. A. M. MARTIN 2,459,385

VERTICAL FILE

Filed July 28, 1944 2 Sheets-Sheet 1

Fig. 1

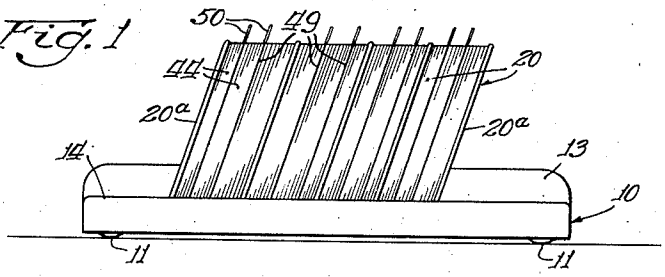


Fig. 6

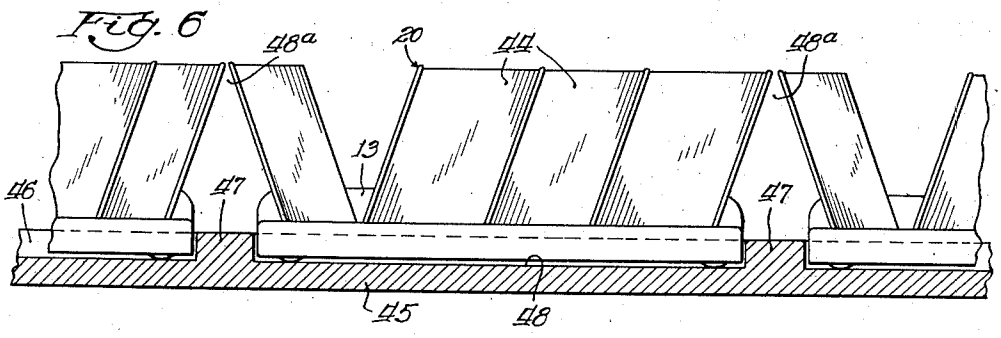


Fig. 4

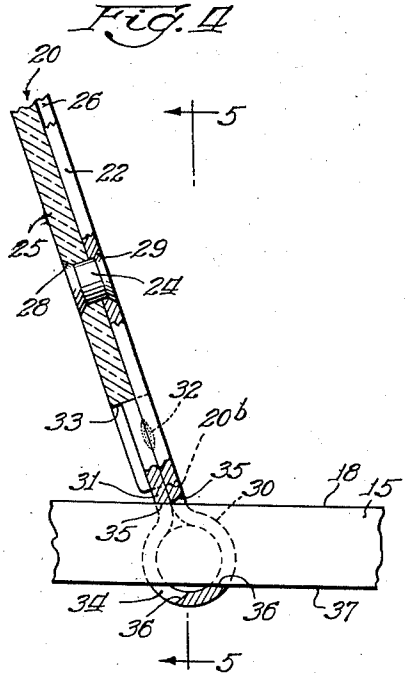
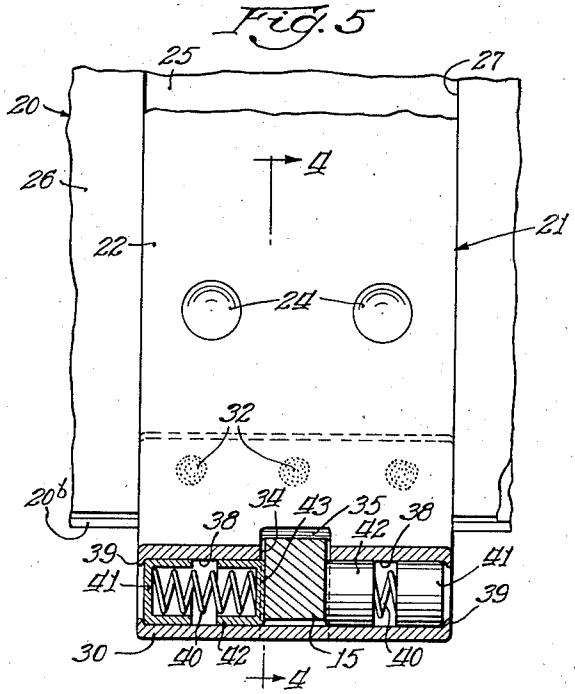


Fig. 5



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Jan. 18, 1949. A. M. MARTIN 2,459,385

VERTICAL FILE

Filed July 28, 1944 2 Sheets-Sheet 2

Fig. 2

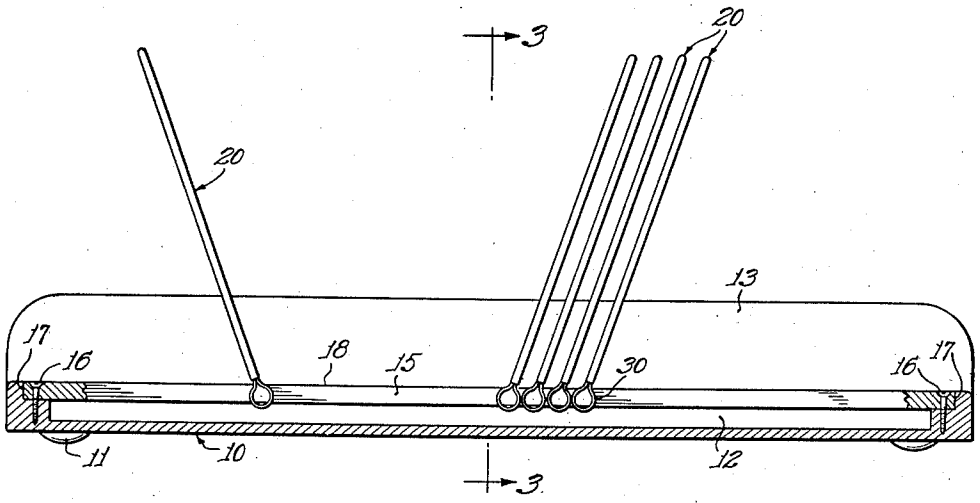
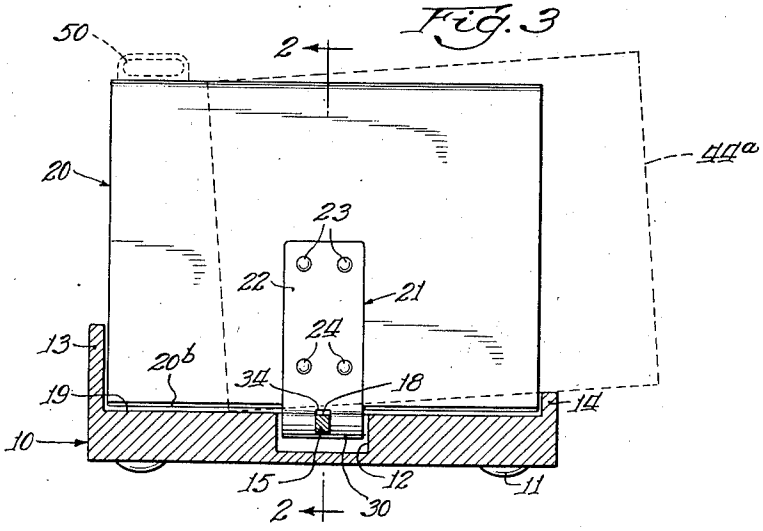


Fig. 3



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UNITED STATES PATENT OFFICE

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VERTICAL FILE

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Application July 28, 1944, Serial No. 546,961

14 Claims. (Cl. 129—15)

1

This invention relates to improvements in vertical files more particularly for the usual file cards of uniform size for a particular file and which may be used either for permanent filing or for preliminary sorting of the cards, the file being readily self-adaptable to either purpose with enhanced usefulness and reliability.

In an important aspect, the invention provides a file of this class which is substantially self-expanding as the number of cards received therein is increased, such expansion at the same time being sufficiently but yieldingly resisted so that the cards do not become too loosely held for safety and usefulness.

In another important aspect, the invention contemplates a plurality of follower-supports or follower-dividers for the cards between which the cards are interposed for somewhat vertical disposition, and each of the follower-supports being provided with individual means for frictionally but yieldingly resisting sliding movements.

By the present invention, not only is the necessity for the usual rear auxiliary follower eliminated but also the necessity for a front wall for the file, the follower-supports being preferably initially located adjacent the middle, from front to rear of the file, and expansion taking place in both directions simultaneously, thus greatly facilitating the speed and ease with which cards may be filed as well as access to the cards when desired, the follower-supports limitedly tilting either rearwardly or forwardly as required with equal facility unhampered by any front wall or rear auxiliary follower which would have to be manually adjusted.

Furthermore, following the present invention, index cards, freely interspersed with the cards and follower-supports, may be employed having index tabs which project above the upper edges of the follower-supports and with which the latter do not interfere in any way and which are freely visible unhampered by any other file parts, the follower-supports being in fact advantageously disregarded in arranging the alphabetical or other sequence filing of the cards and the index cards therefore, and being thus left free to serve their primary purpose of follower-supports rather than being obliged to serve also as index partitions.

These and other objects and advantages will be apparent and the invention will be readily understood, by reference to the following detailed description, taken together with the accompanying drawings, showing an illustrative embodiment of the invention, and in which:

2

Figure 1 is a side elevational view of a file constructed in accordance with the present invention, file cards and index partitions being shown therein;

Figure 2 is an enlarged longitudinal view of the structure of Figure 1 but with the file cards and index partitions absent, and being a section taken on the line 2—2 of Figure 3 but with the follower-supports shown in elevation, and in changed positions;

Figure 3 is a transverse sectional view on the line 3—3 of Figure 2, but showing in broken lines at one side the index tab of an index partition, and, in broken lines at the other side, a file card in offset position;

Figure 4 is a still further enlarged fragmentary sectional view of the follower-support and guide rod being a section taken on the line 4—4 of Figure 5;

Figure 5 is a fragmentary facial sectional view, taken on the line 5—5 of Figure 4; and

Figure 6 is a longitudinal view, on the scale of Figure 1, of a number of such files arranged end to end on a rack or the like for ready reference, the rack being shown in longitudinal section.

Referring in detail to the illustrative construction shown in the drawings, the file of the present invention comprises a base 10, which may have on its bottom face, adjacent each corner, a dome shaped glide projection 11 upon which the file may rest on an ordinary desk or on a specially prepared rack therefor, the file if thus resting upon an ordinary desk being movable thereon for convenience without scratching or otherwise marring the desk.

Running longitudinally centrally of the base 10 is a channel 12, the base being conveniently formed of wood and the longitudinal chanel 12 being readily cut therein. Along one longitudinal side, the base may carry a parapet 13 and along its opposite longitudinal side another parapet 14, the latter being lower than the parapet 13 for purposes presently explained.

Arranged longitudinally of the base 10, centrally thereof and in this instance in the channel 12, is a guide rod 15, advantageously of metal and secured at each end to the base as by screws 16. The guide rod 15 is desirably set into the base at each end as at 17, the base being rabbetted therefor at these points in central alignment with the channel, so that the upper surface 18 of the guide rod is flush with the deck surface 19 of the base 10.

Associated with the base 10 and arranged

transversely of the guide rod 15, are a plurality of follower-supports 20, each follower-support having a mount part 21 depending therefrom central of its lower edge and received in the channel 12 to engage the guide rod 15, for sliding movement of the mount on the guide rod and thus of the follower-support longitudinally of the base.

In accordance with the present invention, the mount part 21 of each follower-support is of metal and has a main leg 22 which is flat and plate-like and is securely riveted as at 23 and 24, in a pair of places, the pairs being vertically spaced apart, to the body panel 25 of the follower-support 20 which may be of fibre-board, the follower-support being of laminated formation to comprise an auxiliary panel 26 which faces the main panel 25 on its face to which the mount leg 22 is riveted, the facing panel 26 being cut out as at 27 to receive the mount leg 22, these latter parts being of the same thickness so that the outer face of the mount leg is thus flush with the outer face of the auxiliary panel to avoid protruding edges which might damage or interfere with the cards. To further prevent this, the rivets 23 and 24 are desirably countersunk as at 28 and 29 in both the main panel 25 and the auxiliary panel 26.

At its lower end the mount 21 is continued below the panels 25 and 26 in a tubular formation 30 and is thereafter bent upon itself as at 31 to close the tubular formation 30 and to provide a secondary leg of the mount which laps the main leg 22, the two legs being securely spot-welded together as at 32. To again prevent protruding edges the main panel 25 is here cut away as at 33 to receive the secondary leg 31 of the mount.

Centrally of the tubular formation 30 of the mount, is a slot 34 which passes the guide rod 15 therethrough, and in this instance and desirably the guide rod is of rectangular cross section and the slot 34 of the follower-support mount is similarly rectangular to interfit with the cross-sectional shape of the guide rod. This permits limited rotative or tilting movements of the follower-support on the guide rod from a vertical position rearwardly and forwardly thereof, that is, toward the rear end or toward the forward end of the base 10. It has been found that a limit of tilting movement for the follower-supports in either direction from the vertical is preferably approximately twenty degrees from the vertical, and the follower-supports are thus in this instance securely held from tilting to a greater degree than just indicated, that is just enough to permit access to a given card while preventing the cards to be received therebetween, as presently described, from slumping.

The reinforced construction of the follower-supports and their respective mounts and the security of attachment of the mount to the follower-supports as already pointed out in detail, afford a rigid structure for the combined follower-support panel and its mount which will resist any bending stress to which it may be subjected in customary usage no matter how full the file may be. Furthermore the size of the guide rod 15 is intended to be such that any deflection of the guide rod is eliminated and at the same time the tubular formation 30 of the follower-support mount is of sufficient strength to prevent any deflection thereof with respect to the guide rod, beyond the desirable limits of tilting already referred to. To accommodate this tilting, and here again to avoid sharp edges, the upper margins of the slot 34 are advantageously beveled as at 35 and the lower margins are similarly and correspondingly beveled as at 36, to contact the upper edge 18 of the guide rod and the lower edge 37 thereof respectively.

Further in accordance with the present invention, the tubular formation 30 of each follower-support mount constitutes a spring barrel, and in fact, as here shown, a pair of spring barrels 38, one on each side of the guide rod 15, these barrels being open at their ends adjacent the guide rod and being at least partially closed at their outer ends as in this instance by the swedgings 39. In each spring barrel is shown a helical spring 40. One end of each spring is bottomed in a spring cup 41 which bears against and is retained in the spring barrel by the swedgings 39, and the other end of each spring is received in a movable spring plunger 42, which is also conveniently cup shaped to receive this spring free end. These spring plungers 42 thus are urged toward each other by the springs through the otherwise open adjacent ends of the spring barrels, and, when the follower-supports are mounted on the guide rod, the spring barrels 42 press against the vertical faces of the guide rod and thus create friction between the guide rod and the follower-support at all times. Since the guide rod is of rectangular cross section and thus having flat vertical faces against which the spring barrels 42 abut, and the spring barrels themselves at their faces which abut the guide rod are desirably flat as at 43, the contacting surfaces are increased and the frictional drag of the springs 40 thereby is enhanced. The structure just described provides a resilient and as here shown spring actuated detent means frictionally resisting sliding movements of the follower-support with respect to the base, such detent means being provided independently for each follower-support and functioning in both vertical and tilted positions of the follower-support, while at the same time freely permitting said tilting within the limits previously referred to. A further description of such tilting, and also of longitudinal sliding movements of the follower-supports on the guide rod with respect to the base, will next be described.

Contrary to what is true of the usual file, the present invention contemplates and reaches its greatest usefulness when the follower-supports 20 initially, that is, when the file is first begun to be filled, are grouped adjacent the center of the file longitudinally rather than at one end thereof, so as to permit expansion in both directions longitudinally as file cards 44 are inserted in the file between the follower-supports. It will be noted that due to the tubular formations 30, the follower-supports, even when closely abutted at their lower ends with no cards therebetween, are still spaced apart so that cards may be readily inserted therebetween, by fingering the upper edges of the follower-supports and tilting two immediately adjacent follower-supports in opposite directions so as to leave a trough-like space therebetween. In most instances, the cards 44 are inserted in the file one by one, and this is especially true when the file is used as a sorting device. In such instances the cards and follower-supports are repeatedly tilted back and forth as cards are placed in the file in different sequential positions therein, and it has been found that due to such repeated tiltings of the follower-supports as the cards are dropped therebetween one by one, say, the follower-supports will move longitudinally of the

file just a sufficient distance to accommodate the increasing number of cards placed in the file, and overcoming to this extent, but no more, the frictional drag of the spring detent means previously herein described. If the direction of least resistance is forwardly, the follower-support or follower-supports in front of the card most recently inserted will move forwardly a sufficient distance to accommodate the most recently inserted card or cards and those to the rear of the latter will remain substantially stationary. If, on the other hand, the direction of least resistance is rearwardly, expansion will take place automatically in the latter direction. Of course, as a whole, expansion takes place in both directions, and thus continuing until the file is completely filled with the forwardmost and rearwardmost follower-supports being at the ends of their movements on the guide rod at each end of the base respectively. If, on the other hand, a large number of cards be inserted at one time between say two adjacent follower-supports, all that is necessary to provide room therefor is to manually jiggle the cards and follower-supports and the latter will thereupon move apart sufficiently on the guide rod, again overcoming to the necessary extent the frictional drag of the spring detent means, to accommodate the number of cards so inserted. In either case, whether the cards be inserted one by one, or in considerable number at one time, the follower-supports due to their individual detent means will not move apart normally and unless positively so moved beyond the extent necessary to receive the cards properly in the file with the lower edges of the cards **44** resting upon the deck **19** of the base and with their upper edges aligned say just slightly below the upper edges of the follower-supports.

When the file is used as a posting tray, for example, cards to which particular attention is desired to be given, may be offset to one side of the base **10**, as indicated in broken lines at **44***a* (Figure 3) such card in that case resting on edge on the lower parapet **14** at this side of the file. When such specially designated card has been posted or is no longer desired to be singled out, it may be returned to normal position aligned with the remainder of the cards, the higher parapet **13** at the opposite side of the file serving as an aligning and stop means both at this time and also at all times when cards are inserted. When the cards are placed in the file in normal alignment, the parapet **14** also serves as a retaining means. The parapets **13** and **14** are spaced apart a distance just sufficient to receive the cards **44** therebetween; also of course the follower-supports themselves.

As shown in Figure 6, when a number of such files is used simultaneously, the files may be arranged end to end in a suitable support for the purpose, such as the rack **45**, which may have rails **46** at each side (only one of which is here shown) to align the files longitudinally, and also may have spacer elements **47** between the pockets **48** for the respective files, the spacer elements being of such size that when two adjacent files are completely filled and the adjacent follower-supports **20** thus at their limit of movement on the guide rod **15**, the two follower-supports, adjacent each other on adjacent files, may be inclined toward each other while still being spaced apart at their upper edges so as to avoid interference one with the other, as at **48***a*.

Instead of the follower-supports serving as

index partitions, here separate index partitions **49** may be employed advantageously dispersed throughout the file in disregard of the particular place at which the follower-supports **20** may occur. The index partitions may be provided with index tabs **50** (Figs. 1 and 3) on their upper edges in the customary manner having windowed recesses into which insignia slips indicating ordinals or letters of the alphabet, including subdivisions of the alphabetical arrangement in some cases, or other sequential indicia, may be inserted. The index tabs **50** preferably project above both the follower-supports **20** and cards **44**, as shown.

Particularly by the provision of a number of intermediate follower-supports in a given file in addition to the end follower-supports at the forward and rearward ends of the file, the weight of the cards in the file is distributed throughout the structure and is not borne wholly by the end follower-supports. So that it may be clearly understood what is referred to as the end follower-supports, these are here given the additional reference numeral **20***a* (Fig. 1), although it is to be understood that they may be otherwise in every way identical with the other follower-supports, all of which in plurality are numbered **20**. If desired, a forward end follower-support may carry a label indicating the general contents of the file.

It will be understood, that the lower edges **20***b* of the follower-supports just clear the deck **19** in all positions of the follower-supports, so as not to be limited in their tilting movements by the deck surface, while at the same time they are close enough thereto so as to prevent the cards from creeping thereunder.

So constructed and arranged, a strong and extremely flexible file is provided, with a remarkably simple structure, lending itself to mass production at a minimum of cost and, in this particular instance, with a minimum of metal parts or expensive elements.

Manifestly, the invention is not limited to details of construction shown for purposes of exemplification, and it is to be understood that such changes may be made as fall within the scope of the appended claims without departing from the invention.

What is here claimed is:

1. A file of the class described comprising a base to receive file cards thereon, a central channel extending longitudinally of said base, a longitudinal guide rod carried by the base in the channel, a plurality of follower-supports for the file cards associated with the base transversely of the guide rod, each follower-support having a mount part depending therefrom and received in said channel, a slot in each mount passing the guide rod therethrough, said slot and rod being cooperatively arranged for limited tilting of the follower-support from a vertical position rearwardly and forwardly thereof, a spring barrel on the mount on each side of said rod, said barrels being open at their ends adjacent the rod and at least partially closed at their outer ends, a coil spring in each spring barrel abutted therein adjacent said outer end, a spring plunger in the said open end of each spring barrel and pressed by said spring against said rod to frictionally resist relative sliding movement of the mount with respect to the rod and sliding movement of the follower-support with respect to the base while permitting said sliding movement when said follower-supports are in vertical position and when

increased numbers of file cards are received between two adjacent follower-supports.

2. The structure of claim 1 wherein the base has parapets along its longitudinal margins spaced apart transversely to somewhat snugly receive the cards therebetween to align said cards.

3. The structure of claim 1 wherein the base has parapets along its longitudinal margins to receive the cards somewhat snugly therebetween to align said cards and wherein one parapet is lower than the other to permit offsetting a card thereon for indicia purposes.

4. The structure of claim 1 wherein the tilt of the follower-supports is of the order of twenty degrees forwardly or rearwardly of the vertical.

5. The structure of claim 1 wherein the mount has an upwardly extended leg secured to the follower-support body plate for enhanced strength.

6. The structure of claim 1 wherein the guide rod is of non-circular cross section and is arranged in said channel to be substantially flush with the upper surface of the base.

7. The structure of claim 14 wherein the said detent means comprises a tubular member carrying a coil spring and a plunger pressed by said coil spring against the guide means.

8. The structure of claim 14 wherein said detent means comprises a tubular member carrying a pair of coil springs and a pair of plungers oppositely directed against said guide means and pressed thereagainst by said coil springs respectively.

9. A file of the class described comprising a base, guide means positioned on the base, a follower-support mounted on the base above and transversely of the guide means and slidable with respect to the guide means longitudinally of the base, a mount member rigid with the follower-support, said member including an element interengaging with the guide means, said follower-support base being arranged for limited relative rotative movement whereby the follower-support is limitedly tiltable on the base from a vertical position rearwardly and forwardly thereof, and co-operating resilient detent means jointly carried by the mount and guide means extending laterally from said mount and pressing laterally against said guide means to frictionally resist sliding movement of the follower-support on the base in all tilted and vertical positions of the follower-support while permitting said tilting in either direction from the vertical and sliding movement of any follower-support when in substantially vertical position against the frictional resistance of said detent means.

10. A file of the class described comprising a base, guide means positioned on the base, a plurality of substantially rigid adjacent follower-supports mounted on the base above and transversely of the guide means and slidable with respect to the guide means longitudinally of the base, a mount member rigid with each follower-support, said mount member including an element interengaging with the guide means, said follower-support and base being arranged for limited relative rotative movement whereby each follower-support is limitedly tiltable on the base from a vertical position rearwardly and forwardly thereof, and co-operating resilient detent means carried jointly by the follower-supports and guide means and pressing laterally between the support and guide means to frictionally resist sliding movement of the follower-support on the base in all tilted and vertical positions of the follower-support while permitting sliding movement of any follower-support when in substantially vertical position against the frictional resistance of said detent means.

11. A file of the class described comprising a base to receive file cards thereon, a central channel extending longitudinally of said base, longitudinally extending guide means carried by the base in the channel, a follower-support for the file cards associated with the base transversely of the guide means and slidable with respect to the guide means longitudinally of the base, the follower-support having a mount part rigidly depending therefrom and received in said channel, an element rigid with the mount part interengaging with the guide means, said follower-support and base being co-operatively arranged for limited tilting of the follower-support from a vertical position rearwardly and forwardly thereof, a spring barrel on the mount, a coil spring in the spring barrel and pressing against said guide means to frictionally resist relative sliding movement of the mount with respect to the guide means and sliding movement of the follower-support with respect to the base while permitting said sliding movement when said follower-support is in vertical position and when increased numbers of file cards are received between two adjacent follower-supports.

12. A file of the class described comprising a base to receive file cards thereon, a central channel extending longitudinally of said base, longitudinally extending guide means carried by the base in the channel, a plurality of follower-supports or follower dividers for the file cards associated with the base transversely of the guide means, and one serving for each of front and rear members for the file and permanently attached to the file, each follower-support having a mount part depending therefrom and received in said channel, elements on each mount interengaging with the guide means, said follower-supports and base being co-operatively arranged for limited tilting of the follower-support from a vertical position rearwardly and forwardly thereof, a spring barrel on the mount, a coil spring in the spring barrel and pressing against said guide means to frictionally resist relative sliding movement of the mount with respect to the guide means and sliding movement of the follower-support with respect to the base while permitting said sliding movement when said follower-supports are in vertical position and when increased numbers of file cards are received between two adjacent follower-supports.

13. A file of the class described comprising a base to receive file cards thereon, a central channel extending longitudinally of said base, longitudinally extending guide means carried by the base in the channel, a plurality of follower-supports or follower-dividers for the file cards associated with the base transversely of the guide means, each follower-support having a mount part depending therefrom and received in said channel, elements on each mount interengaging with the guide means, said elements and guide means being co-operatively arranged for limited tilting of the follower-support from a vertical position rearwardly and forwardly thereof, a spring barrel on the mount, a coil spring in the spring barrel and pressing against said guide means to frictionally resist relative sliding movement of the mount with respect to the guide means and sliding movement of the follower-support with respect to the base while permitting said sliding movement when said follower-sup-

ports are in vertical position and when increased numbers of file cards are received between two adjacent follower-supports.

14. A file of the class described comprising a base to receive file cards thereon, longitudinally extending guide means carried by the base including a channel therein, a follower-support for the file cards associated with the base transversely of the guide means and slidable with respect to the guide means longitudinally of the base, the follower-support having a mount part depending therefrom and received in said channel, said follower-support and guide means being cooperatively arranged for limited tilting of the follower-support from a vertical position rearwardly and forwardly thereof, a tubular member on the mount extending laterally from said mount and received in said channel, a coil spring in the tubular member pressing against said guide means laterally of said channel to provide frictional detent means resisting relative sliding movement of the mount with respect to the guide means and sliding movement of the follower-support with respect to the base while permitting tilting movements rearwardly and forwardly of

the vertical and said sliding movement when said follower-support is in vertical position.

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