Dec. 21, 1943. P. ZALKIND 2,337,079

CONTAINER-DRAWER STOP AND ALIGNING MEANS

Filed June 2, 1938 3 Sheets-Sheet 1

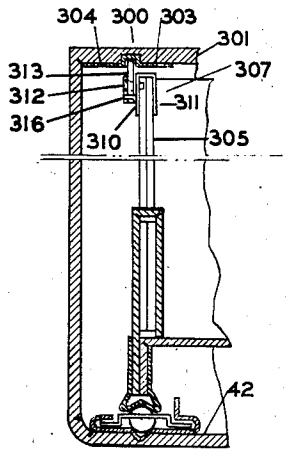


FIGURE 2

FIGURE 1

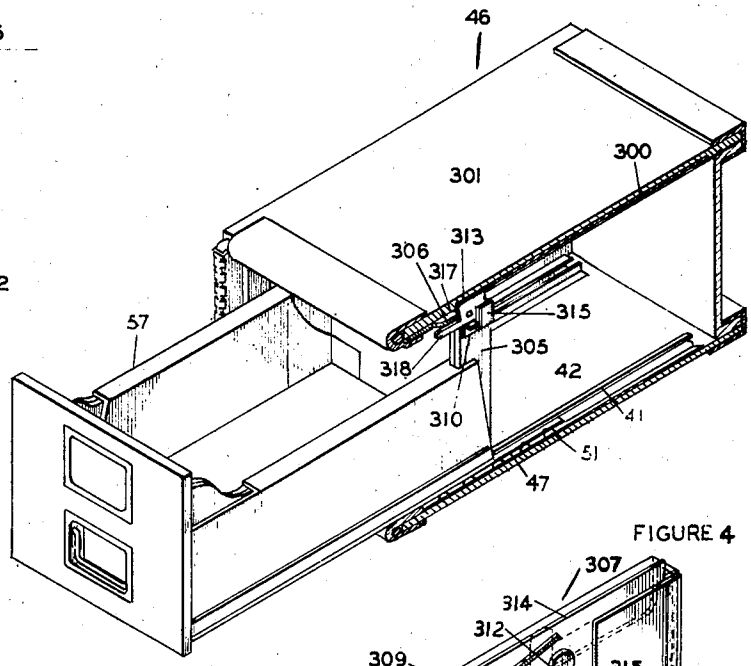


FIGURE 4

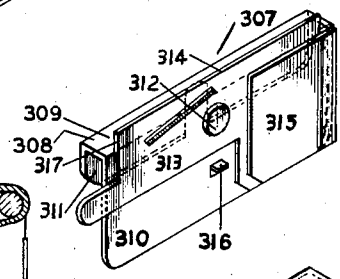


FIGURE 5

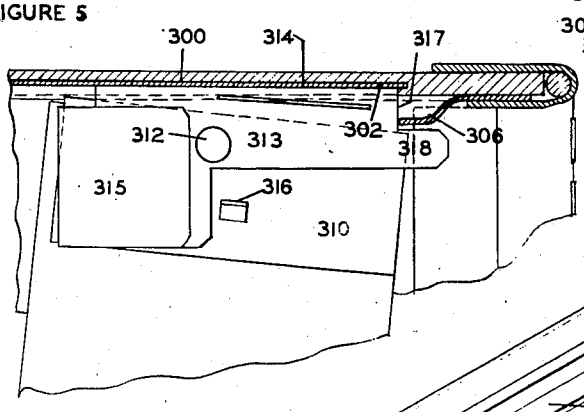


FIGURE 3

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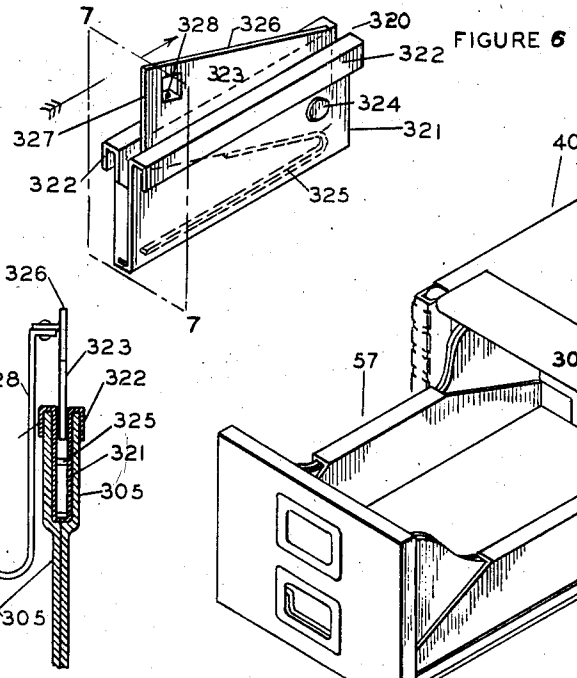


FIGURE 6

FIGURE 7

FIGURE 8

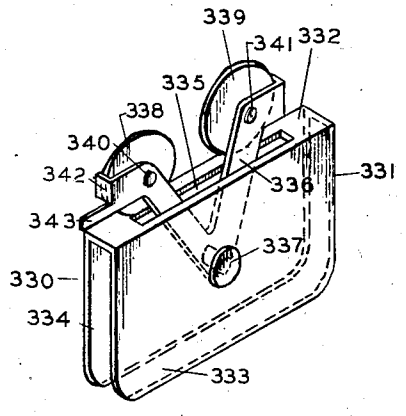


FIGURE 9

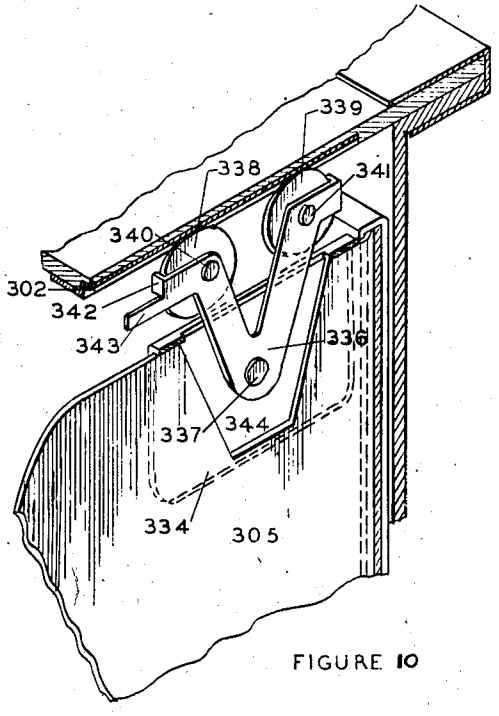


FIGURE 10

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FIGURE 11

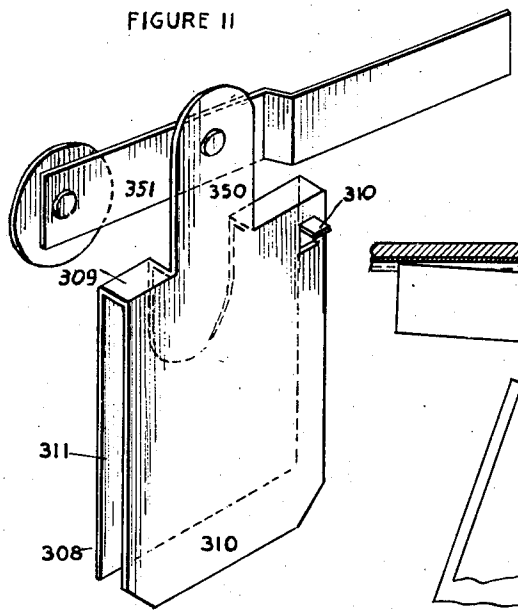


FIGURE 12

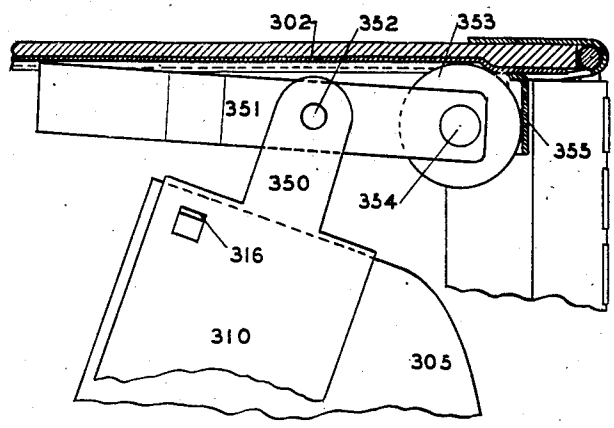
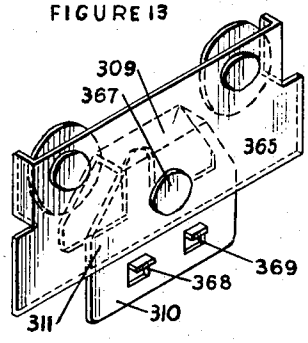


FIGURE 13



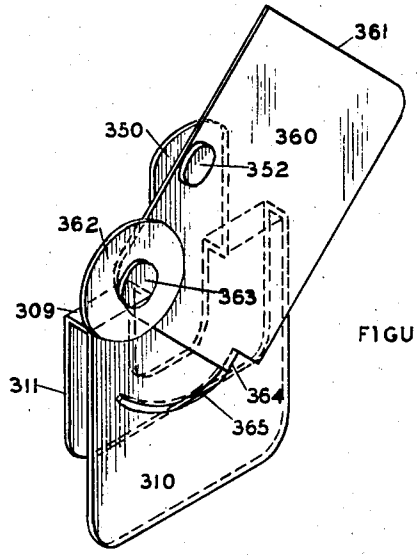
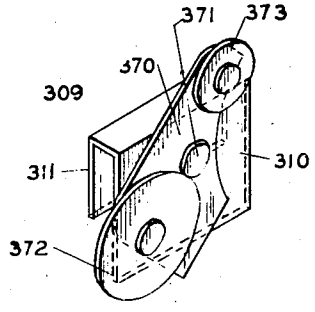


FIGURE 15

FIGURE 14



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Patented Dec. 21, 1943 2,337,079

UNITED STATES PATENT OFFICE

2,337,079

CONTAINER—DRAWER STOP AND ALIGNING MEANS

Philip Zalkind, New York, N. Y.

Application June 2, 1938, Serial No. 211,385

5 Claims. (Cl. 45—77)

My invention relates to collapsible containers wherein a collapsible drawer is intended to be slidable into and out of the open front of a casing, and in connection with which novel drawer stop and aligning means are provided.

Such casings and drawers may be economically constructed of fibrous sheet material, the casing being reinforced and strengthened, particularly at the open front, by means such as that provided in my Patent No. 2,118,011, and may be strengthened in the rear, if necessary, by the inset back construction set forth in my Patent No. 2,159,070, the drawer being formed substantially as described in my Patent No. 1,946,516.

When the casing and drawer combination is used as a transfer file for storage of records and papers or for any other purpose involving the loading of the drawer with relatively heavy material, the movement of the drawer may be impeded by the friction developed between the bottom of the drawer and the floor of the casing. Accordingly, in my Patents Nos. 2,233,906 and 2,200,319, as well as in other applications herein set forth, I have provided for various types of friction reducing means and mechanisms between the casing floor and the drawer bottom. Likewise, in my application entitled "Containers and parts therefor" which is to be filed simultaneously herewith, Serial No. 211,384 filed June 2, 1938, I have provided for additional and improved friction reducing means.

Where, by the use of efficient anti-friction means, the movement of the drawer is facilitated to the extent that only a minimum of effort is required to operate it, it becomes necessary to provide means such as drawer-stop to prevent undesired or intended removal of the drawer from the outer casing. Such drawer-stop should, where possible, reinforce both the drawer and the casing, facilitate the operation of the drawer, and even serve to suspend the drawer when it is so far withdrawn that its center of gravity is outside the casing; and it should not interfere with the collapsibility of casing and drawer where that is a factor. Such drawer stop may be provided in connection with a reinforcing member as shown in my Patent No. 2,210,019, or may be independent thereof.

Objects of this invention, therefore, are to provide in a casing and drawer combination a drawer stop which may, if desired, cooperate with any anti-friction means which may be used (and particularly the anti-friction means set forth in my application entitled "Containers and parts therefor," Ser. No. 211,384 filed June 2, 1938, in order to align the drawer with said anti-friction means; a drawer stop which will permit withdrawal of the drawer and yet serve as a stop for the drawer when withdrawal thereof is not desired; that will not interfere with collapsibility of drawer and casing; and that may even serve to suspend the drawer when it is partially removed from the casing.

Other objects and uses of my invention will, in part, be apparent and in part indicated in the following description and drawings in which:

Figure 1 is a perspective view partially broken away showing one form of my drawer stop in a casing and drawer structure, the said drawer stop aligning the drawer with respect to the anti-friction means shown in my application entitled "Containers and parts therefor" Serial No. 211,384, filed June 2, 1938.

Figure 2 is a cross-sectional view showing the cooperation of the elements of Figure 1.

Figure 3 is a detail perspective view of the upper rail or groove of the casing of Figures 1 and 2.

Figure 4 is a detail view of the drawer stop.

Figure 5 is a cross-sectional view showing the cooperation of the drawer stop and groove.

Figure 6 is a view in detail of a modified form of drawer-stop.

Figure 7 is a cross-sectional view taken on the line 7—7 of Figure 6 and looking in the direction of the arrow.

Figure 8 is a perspective view partially broken away showing the mounting of the drawer stop of Figure 6 and its relation to casing and drawer.

Figure 9 is a detail view of a modified form of drawer stop.

Figure 10 is a perspective section taken on the line corresponding to line 10—10 of Figure 8 looking in the direction of the arrows showing the mounting of the drawer stop of Figure 9 upon the drawer and its cooperation with the casing.

Figure 11 is a detail of a modified form of drawer stop.

Figure 12 is a cross-sectional view showing the mounting of the drawer stop opposite that of Figure 11 and its cooperation with the casing and drawer, and showing the arrangement of the drawer stop when the door is pulled out to its fullest extent; this view shows the drawer stop adapted to be used on the left hand side of the rear end of the drawer (when facing the drawer front); while the view of Figure 11 is that of the right hand drawer stop.

Figures 13, 14 and 15 are detailed views of alternative forms of drawer stops.

Referring now to Figure 1, I have shown a

drawer stop means which may also serve as a means for aligning the drawer with respect to the casing and to assist in suspending the drawer when its center of gravity is pulled beyond the open mouth of the casing.

In addition to having the inset rail 41, the truck 47 and the ball bearings 51 on the floor 42 of the casing, (which function as a friction reducing means in the manner shown in my application "Container and parts therefor," Ser. No. 211,384 filed June 2, 1938, the casing also has a pair of groove rails 300 set into the ceiling or inner surface of its top wall 301. Such groove rails may be inset in the top wall or ceiling in the same manner as the inset rails 41 are mounted in the bottom wall, that is, by means of prongs driven from the groove or from the flanges, or by adhesive means, by being mounted in a compressed or stripped out portion of the wall, or by any combination of the foregoing, and they may each take the form shown in Figure 3 or any alternative or modified form or rectangular, V shaped or arcuate section, adapted to accomplish the purposes hereinafter set forth. They may also serve to stiffen and reinforce the top wall in a manner already described in the aforementioned application.

Each upper groove rail 300 (Figs. 1, 2, 3, 5) comprises preferably a metallic member having a groove 302 extending the length thereof and flanges 303, 304 extending from the edges of the groove and providing a preferred means for mounting the groove rail 300 in the top wall of the casing.

The tongues 305 at the rear of the drawer 57, said drawer being formed substantially in accordance with my Patent No. 1,946,516, may be so formed as to have an extension which will register with and ride in the groove 302 of the groove rail 300 and thus serve to maintain the drawer in alignment within the casing. Such extension may be integral with the material of the drawer or a metal extension may be mounted on the tongue 305. Such metal extension may be attached to the rear tongues before shipment or may be supplied in a form easily mountable on such tongues by the consumer either before or after the drawer is erected.

The grooved rail 300 in the upper wall 301 of the casing 40 thus forms a simple and efficient drawer stop device. A stud or stop 306 (Figs. 1, 3, 5) may be placed at the front end of the grooved rail 300, blocking the groove 302. Such stop, may as shown in Figure 3 merely comprise an integral portion of the groove rail itself bent down to block the groove 302 or it may be a prong driven out from the material of the groove itself or it may be a bead or plug placed in the forward end of the groove; or any other means may be used to block the groove such as the front edge top wall reinforcement. In such a case, the extension above described of the tongue 305 of the drawer, will position the drawer within the casing as it slides into and out of the casing by reason of the fact that the extension travels within the groove 302. But when such extension strikes the stop 306, it will prevent further movement of the drawer out of the casing, and thus prevent accidental and unintended removal of the drawer from the casing.

The metal extension for the rear tongues 305, of the drawer 57, may instead of merely constituting an extension or lug, take a special and unique form such as that shown in Figure 4, which will permit easy insertion of the drawer within the casing, which will provide a strong and continuously registering alignment means for the drawer, which will provide an effective and yet easily releasable drawer stop, and which will nevertheless be economical in construction and easy to attach.

The drawer stop 307 (Figure 4) comprises a short channel member 308 having a top 309 and legs 310 and 311. Leg 310 has pivotally mounted thereon by the pivot 312 a glider 313. The distance from the pivot 312 to the top edge 314 of the glider 313 is such that when the drawer is mounted in the casing as shown in Figures 1, 2 and 5, the top edge 314 will ride within the groove 302. The glider 313 is by the method of pivoting, or by the addition of a weight 315, heavier along its area beyond or to the rear of the pivot 312 so that, when free of the groove 302 it will tend to drop so that the top edge 314 of the glider will slope toward the rear. A lug 316 may be used to limit the drop of the rear end of the glider. It will thus be obvious that the insertion of the drawer within the container is facilitated by the slope of the edge 314 thus created. The rear end of the drawer may be pushed into the casing, the slope of the edge 314 permitting such placement in the casing without undue care being required; such slope and pivoting also permitting the glider and its top edge 314 to pass beyond the stop 306. After insertion in the casing, the top edge 314 will ride within the groove 302 and register therein along its entire length by reason of the height of the tongue 305 of the drawer, and the distance between the pivot 312 and the top edge 314.

The mounting of the rear end of the drawer, even when the drawer is extended, between the upper groove rail 300 and the bottom inset rail 41, provides a sufficient and strong support for the drawer so that, even when substantially withdrawn from the casing, the drawer will nevertheless be suspended and extend straight out from the casing without sagging. When the drawer is withdrawn from the casing to the extent that the forward edge 317 of the glider 313 abuts against the stop 306; even if the drawer then tends to sag or drop a bit by reason of the disproportionate displacement of its center of gravity beyond the mouth of the casing, the glider 313, by reason of its pivoting will (cf. Fig. 5) continue to register within the groove 302 and its forward edge 317 will continue to abut against the stop 306 to prevent unintended removal of the drawer.

The arm 318 extending from the glider 313 forward from the front or stopping edge 317 will facilitate the complete removal of the drawer from the casing when desired. Such arm 318 will extend beyond the stop 306, when the drawer is pulled out so that the edge 317 abuts against said stop 306, and will thus be readily accessible, so that downward finger pressure on the said arm 318 will cause the glider 313 to turn about the pivot 312, thus disengaging the edge 317 from the stop 306 and permitting the complete withdrawal of the drawer.

While the type of drawer stop herein shown is peculiarly adapted to align the drawer within the casing with respect to an anti-friction means, it is obviously not confined to that friction and may be utilized independently of any idea of alignment. Other modifications of the drawer stop mechanism described herein will be obvious. Thus in Figure 6 I have shown a type of drawer stop and glider to be mounted on the tongues

305 of the drawer member. This drawer stop 320 comprises a narrow metallic casing 321 having a channel or flange 322 along each longitudinal open edge thereof. A glider 323 is pivoted therein on the pivot 324 and is maintained in raised position by the spring 325 so that it will ride in and be engaged by the groove rail 308 (Figure 8). As seen in Figure 7, it may be mounted on the drawer by being inserted between the two laminations of the tongue 305, the flanges 322 engaging and resting upon each lamination of said tongue.

While I have shown the outer sides of the tongues 305 deformed by the mounting of the drawer stop therein; nevertheless, where the drawer and the tongues 305 are made of compressible fibrous material such as corrugated board, the drawer stop may be inserted between the tongues 305 in such manner that the inner surfaces of the tongues are depressed around the drawer stop and so that the outer sides of the tongues 305 will be flush and uniform.

When, as in Figure 8, a drawer 57 having the stop 320 is inserted in a casing 40 having upper grooved rails 300, the upper edge 326 may be pushed beyond the stop 306 to ride within the groove 302 as previously described, and the forward edge 327 will abut against the stop 306 when the drawer is almost fully withdrawn. An arm 328 (Figure 7) may be mounted on the glider 323 to facilitate the pressing down of the glider when it is desired to fully withdraw the drawer, such arm 328 may take the form shown in Figure 7 or it may be merely a projection integrally connected to the glider 323 and extending beyond the forward edge 327.

It may be possible for a certain amount of friction to develop between the top edge of a glider of the type herein described and the surface of the groove 302. Accordingly, I may find it expedient to attach rollers to such glider to minimize whatever friction may develop. Such rollers may easily be mounted along the edge 314 of the glider 313 (Figure 4) and along the edge 326 of the glider 323 (Figure 8).

However, alternative forms of gliders and drawer stops having rollers are possible within the spirit of my invention. Thus, in Figure 9, I have shown one form of drawer stop to be mounted on the tongues 305 of the drawer wherein the stop 330 comprises a channel member 331 having a top 332 and legs 333 and 334. The top 332 is slotted at 335 and a substantially V shaped glider 336 is pivotally mounted on the shaft 337 which extends between the legs 333 and 334. Rollers 338 and 339 are rotatably mounted on the pins 340 and 341 and ride within the groove 302 (Figure 10) when the drawer is inserted in the casing. An abutment 342 may be provided in front of the forward roller so that it may register with the stop 306 and prevent unintended movement of the drawer out of the casing. An arm 343 may also be provided to facilitate removal of the drawer from the casing in a manner which will be now understood. The tongues 305 of the drawer must be slotted at 344 (Figure 10) in order to permit the mounting and operation of this type of drawer stop.

One of the advantages of the type of drawer stop shown in Figures 6 and 9 is that by providing an abutment 342 and arm 343 at each end of the stop there will be no "rights" and "lefts" or "front" and "back" and they may thus be used interchangeably on either side of the drawer, the drawer stop of Figure 9 being mountable on the tongues 305 with either end of the stop as the forward end.

The drawer stop of Figure 4 is however the simplest embodiment of my invention and is most economical in construction; this being an important factor when it is to be used with inexpensive structures formed from fibrous materials.

In Figures 11 to 15 I have illustrated various modifications of the drawer stop of Figure 4. Thus, in Figure 11, the channel member 306 may be similar to the channel of the drawer stop shown in Figure 4 and may comprise a top 309 and legs 310 and 311. A lug 350 extends upwardly from the leg 310, such lug being formed from material excised from the leg 311 and the top 309. A glider 351 is pivotally mounted at 352 on the lug 350 and operates substantially in the manner previously described. The glider is weighted toward the rear for purposes now understood preferably by its being mounted in unbalanced position on the pivot 352. The lug 316 operates to limit the rotation of the glider in the same manner as the similar lug in the construction of Figure 4. The forward end of the glider 351 carries a roller 353 rotatably mounted on the pin 354. Such roller provides for rolling friction within the groove 302 (Figure 12), the opposite end of the glider merely trailing. It will be seen that the stop 355 blocking the groove 302 should be so arranged as to effectively stop the roller 353, in order to effect a drawer-stop arrangement. An extension arm similar to the extension 318 of Figure 4 may be placed at the forward end of the glider 351 to permit release of the stopping mechanism when the drawer is to be fully withdrawn.

The structure of Figures 11 and 12 may be varied to form the drawer stop shown in Figure 15 in which the glider 360 is pivotally mounted at 352 the forward edge 361 acting as the means which will abut against the stop 306 of the groove 302 (cf. Figure 3). The trailing end of the glider 361 may be weighted for purposes which are now apparent by the roller 362 rotatably mounted on the pin 363. The movement of the glider 360 about the pivot 352 is limited by a lug 364 which rides in the slot 365. Again an extension arm may be provided at the forward edge 361 to permit release of the stop mechanism for complete withdrawal of the drawer.

Any of the stops or gliders herein described may be used without rollers, with rollers at the forward end, rollers at the trailing end, rollers at each end, or rollers otherwise arranged along the glider as experience dictates.

The stop member of Figure 4 may be provided with rollers as in Figure 13 wherein the glider 366 may be balanced on the pivot 367 lugs 368, 369 preventing excessive rotation of the glider about its pivot. Or as in Figure 14 the glider 370 on its pivot 371 may be weighted at its rear end by the excess material thereat and the larger size of its roller 372 as compared to the forward roller 373. Forwardly extending arms may be provided in all cases to facilitate release of the stop mechanism for the purpose of withdrawing the drawer.

It will be noted that the mounting of the drawer stops herein described will at all times align the drawer within the casing, will guide the drawer into and out of the casing and prevent swaying or lateral movement or sliding of the drawer.

While I prefer to utilize such drawer stops in connection with a grooved rail in the ceiling of

the casing, such rail is not absolutely essential; the drawer stops may ride against the ceiling of the casing or against a reinforced portion thereof, and an abutment may be provided along the front edge of the top wall of the casing to engage the stop.

Other types of drawer stop means may be used within the spirit of my invention.

Each of the constructions herein shown will operate in a rigid or collapsible container. None of the constructions will interfere with the collapse of the container, casing or drawer.

From the foregoing description it will be apparent that my invention resides in certain principles of construction which may be embodied in other physical forms without departure therefrom. I do not, therefore, desire to be strictly limited to the disclosure as given for purposes of illustration but rather to the scope of the appended claims.

Having described my invention, I claim:

1. In a file cabinet comprising a casing section having a top wall and an open front; and a drawer section having side walls and an open top; means on said top wall of said casing section and means on said side walls of said drawer cooperating with each other to align the drawer within said casing; said means on said top wall of said casing comprising an inset rail on the inner side of said top wall; said means on said side walls of said drawer comprising a glider pivotally mounted on said side wall and registering with the said inset rail irrespective of the position of the drawer within said casing.

2. In a file cabinet comprising a casing section having a top wall and an open front; and a drawer section having side walls and an open top; means on said top wall of said casing section and means on said side walls of said drawer cooperating with each other to align the drawer within said casing; said means on said top wall of said casing comprising an inset rail on the inner side of said top wall; said means on said side walls of said drawer comprising a glider pivotally mounted on said side wall and registering with the said inset rail irrespective of the position of the drawer within said casing; and a roller on said glider riding against said inset rail.

3. In a file cabinet comprising a casing section having a top wall and an open front; and a drawer section having side walls and an open top; means on said top wall of said casing section and means on said side walls of said drawer cooperating with each other to align the drawer within said casing; said means on said top wall of said casing comprising an inset rail on the inner side of said top wall; said means on said side walls of said drawer comprising a glider riding within said rail; and an abutment at the forward end of said inset rail comprising a stop preventing movement of the glider beyond the forward end of the rail; said glider being releasable from its engagement with said abutment to permit complete retraction of the drawer.

4. In a collapsible cabinet comprising a collapsible casing section of substantial fibrous material having a top wall and an open front and a collapsible drawer section of substantially fibrous material having side walls and an open top; means on said top wall of said casing section and means on said side walls of said drawer cooperating with each other to align the drawer within said casing; said means on said top wall of said casing comprising an inset rail on the inner side of said top wall; said means on said side walls of said drawer comprising a glider riding within said rail; and an abutment at the forward end of said inset rail comprising a stop preventing movement of the glider beyond the forward end of the rail; said means being arranged to permit collapse of said casing and drawer sections.

5. In a drawer having a side wall, a glider pivotally mounted on said side wall, said glider being pivoted on an axis normal to said side wall, the upper edge of said glider extending above said side wall, and means for yieldingly maintaining the portion of said glider forward of its pivotal mounting in raised position, and a roller on said forward portion of said glider, a portion of said roller extending above the upper edge of said glider.

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