Dec. 19, 1967 R. T. PROULX 3,358,692

FILING SYSTEM

Filed March 17, 1965 3 Sheets-Sheet 1

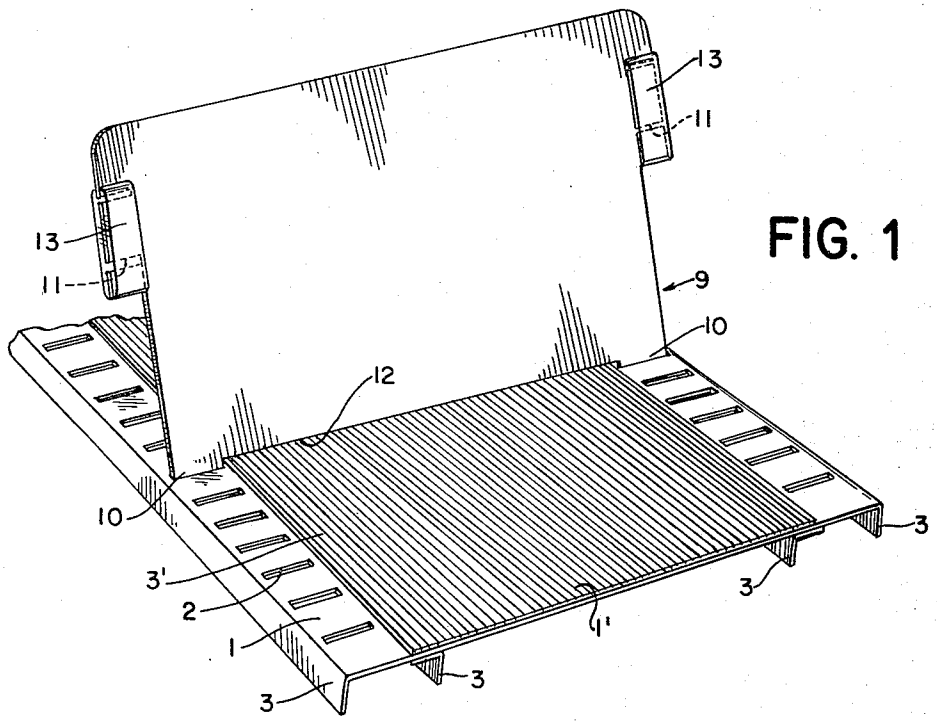


FIG. 1

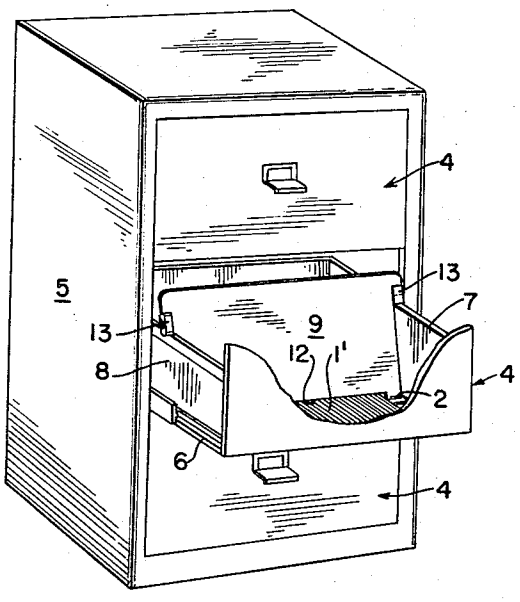


FIG. 2

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FIG. 3

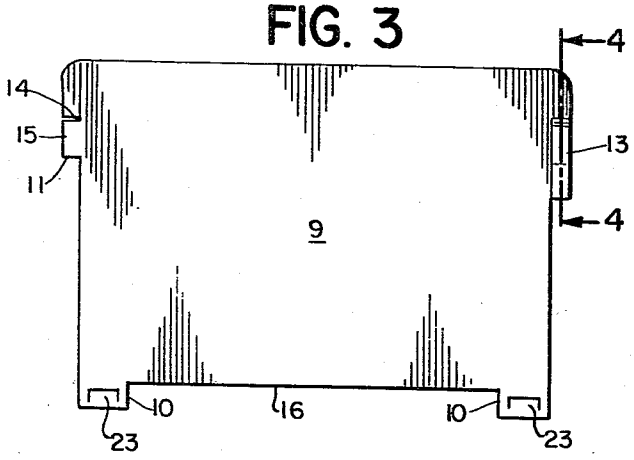


FIG. 4

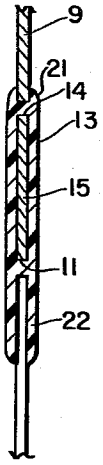


FIG. 5

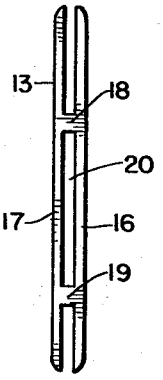


FIG. 6

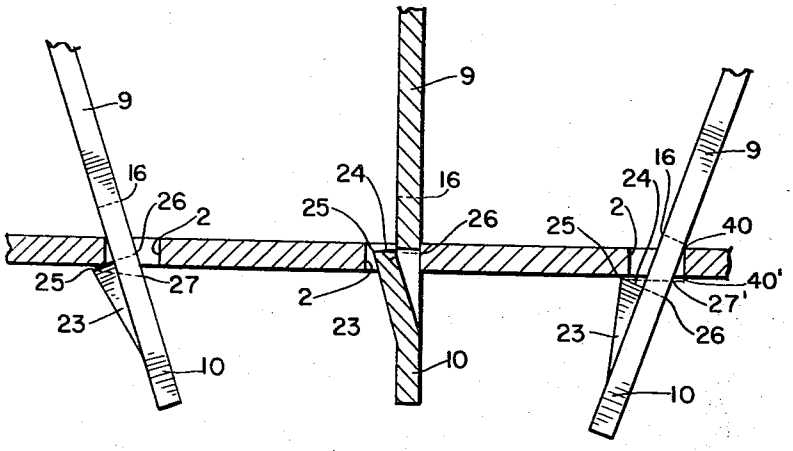
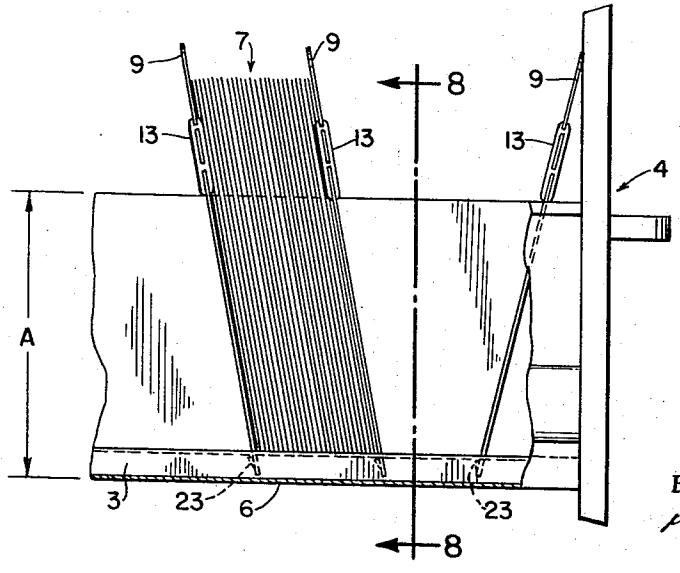


FIG. 7



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FIG. 8

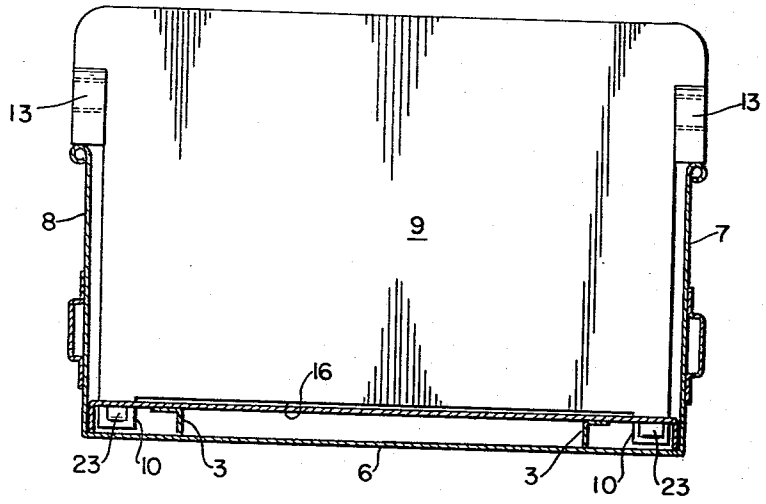
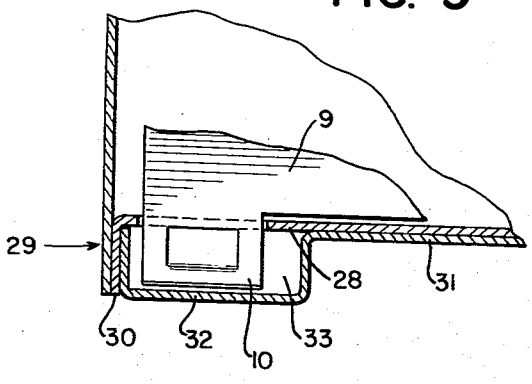


FIG. 9



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FILING SYSTEM

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Filed Mar. 17, 1965, Ser. No. 440,433
5 Claims. (Cl. 129—16)

The present invention relates to vertical filing systems, and more particularly to an improved filing system having a novel divider positioning and engaging means adaptable for use either as an independent filing system in its own housing or as a system insertable into a standard filing cabinet drawer.

Conventional vertical filing systems are generally comprised of two parts, namely, a file housing or drawer member for holding the material to be filed, and a plurality of partition members positioned at spaced locations within the housing for segregating the filed material into separate sections. Although these systems are generally considered acceptable arrangements in the sense that they do provide a way of separating filed material into sections, such systems do posses certain disadvantages as far as their efficiency and versatility are concerned. For example, with vertical filing systems some arrangement should be made for holding the dividers in a generally vertical position with respect to the file housing. In the simplest of constructions, the dividers are merely inserted into a filled file housing at the appropriate places where the filed material is to be separated. Except for the presence of the filed material, however, the dividers in this type of arrangement cannot function to separate the file housing and would upon removal of part or all of the filed material become unsupported and fall over in the file housing. In more sophisticated filing systems, suitable means are provided for removably connecting the separate dividers to the file housing so that when unsupported by filed material, they will still function to divide the file housing into separate sections. With these latter constructions, it is also the usual practice to provide means whereby the dividers may be positioned within the file housing at any desired position independently of the filed material so as to enable the user to adapt the file to the present needs.

For holding these dividers in position within the associated file housing, presently available systems provide for a detachable connection between the separate dividers and housing. This connection is, however, adapted to be made in the interior of the file housing and as such consumes valuable filing space. As examples, presently available systems may include a rod positioned along the bottom interior wall of the file housing for insertion through holes in the bottom of the dividers; teeth type seats formed along the bottom of the housing onto which the dividers may be placed; or elevated rods extending longitudinally along the top sides of the housing for suspending the dividers therein. In each of these constructions, the connection by being effected within the interior of the file housing consumes valuable filing space and otherwise tends to interfere with the placement and movement of the filing material within the file housing.

In addition to the above, presently available vertical filing systems are constructed as integral structures with the housing, dividers and associated connections adapted for use only with their own associated parts. These systems are manufactured as self-contained units and as such are not adaptable for use in conventional file cabinet drawers to convert such cabinets to the vertical file system.

This presents somewhat of a disadvantage for in some instances, the owner of a conventional file cabinet may wish to convert the file drawers into a vertical file system. With presently available systems manufactured as self-contained units, this is, however, not possible and the owner is required to purchase an entirely new file cabinet.

In accordance with the teachings of the present invention, the above-mentioned disadvantages of the conventional systems are overcome and a new system provided in which the dividers are connected to the file housing in such a way whereby the maximum filing space is provided. In addition, releasable locking means are provided for releasably connecting the dividers to the housing, and the system is constructed in such a manner whereby it may be readily inserted into the drawers of conventional filing cabinets.

Generally, the filing system of the present invention includes a file housing structure having a base member, opposing side walls, an open top, and a plurality of dividers positioned within the housing at spaced points. The base of the housing is provided with a plurality of openings through which the bottom edges of the dividers are adapted to be inserted and the dividers themselves are provided along their upper portions with laterally extending shoulders adapted to rest on the side walls of the housing.

The portions of the dividers extending through the base of the housing are provided with locking tabs operable to prevent removal of the dividers from the base member unless they are moved into a predetermined release position; and in accordance with the teachings of the present invention, the base member of the system may be formed integrally with its own housing side walls to provide a self-contained system, or may instead be constructed as a separate structure for insertion into the drawer of a conventional filing cabinet where it is desirable to convert such a cabinet to the vertical filing system. Also, means are provided in the present system for changing the angle of orientation of the separate dividers so that they may be used with housings having side walls of different heights and so that, if desired, their positioning within any particular housing may be varied. For this purpose, the dividers are provided with adjustable compensators attached to the dividers in such a way whereby their effective height may be varied in accordance with the height of the particular file housing.

A more complete understanding of the present invention will be obtained from a reading of the following detailed description with reference being made to the accompanying drawings in which:

FIG. 1 is a fragmentary view of the filing systems showing the relative position of the base and divider members;

FIG. 2 is a fragmentary perspective view of the filing system installed in a standard filing cabinet drawer;

FIG. 3 is a front elevational view of a divider;

FIG. 4 is an enlarged cross-sectional view through line 4—4 of FIG. 3;

FIG. 5 is an enlarged side elevational view of a compensator;

FIG. 6 is a fragmentary cross-sectional view of the filing system showing the locked orientation of the dividers on their supporting base;

FIG. 7 is a fragmentary side elevational view of the filing system installed in a typical commercial filing cabinet drawer;

FIG. 8 is a front elevational view of a divider in a drawer, taken through lines 8—8 of FIG. 7; and

FIG. 9 is a fragmentary cross-sectional view of the self-contained embodiment of the present invention.

As shown in FIG. 1, the filing system of the present invention generally comprises a base member 1 having a flat upper supporting surface covered centrally with a friction member, such as a piece of corduroy material 1'

and provided along the opposite edges with a plurality of openings in the form of slots **2** extending in parallel rows along the length of the base member **1** with the slots of each row aligned with those of the other row. To complete the structure of the base member, downwardly extending flanges **3** are provided. These flanges give the base member added strength and provide a free area under the supporting surface for facilitating the placement of dividers thereon as more fully explained below.

As shown in FIG. 2, this base member **1** is adapted to be placed within a conventional file drawer **4** of a filing cabinet **5**, the downwardly extending flanges **3** of the base positioning the base in a plane spaced from the bottom wall **6** of the file drawer. Once the base member **1** is inserted within the file drawer, it, together with the side walls **7** and **8** of the file drawer, define a file housing. The file housing may then be divided into a number of separate sections by means of divider cards **9**; and in accordance with the teachings of the present invention, these dividers are held in a generally upright position by means located outside the filing area defined by the housing.

Specifically, each divider is provided with a pair of downwardly extending positioning tabs **10** extending downwardly from the central body portion of the divider. These tabs are spaced from each other by a distance equal to the space between the aligned rows of slots **2** in the base member, and by inserting the tabs of a divider into aligned slots of the base member, the bottom edge of the divider will be held in position within the file housing. As such, however, the dividers will still tend to tip in an unrestrained manner within the openings since they are not otherwise supported, and in order to secure them against such movement, outwardly extending shoulders **11** are provided on the opposite sides of the divider. These shoulders are adapted to rest on the upper free edges of the side walls **7** and **8** of the file drawer.

In practice, it has been found desirable to have the dividers supported on the side walls **7** and **8** of the file drawer at a somewhat inclined position as shown in FIGS. 2 and 7. In order, however, to facilitate this same angle of inclination with different file drawers having side walls of different heights A, it is necessary to provide means for changing the effective distance between the shoulders **11** and the bottom edge **12** of the dividers. For this purpose, the dividers are provided with adjustable elongated compensators **13** and as shown in FIG. 3, slots **14** are cut into the dividers above the shoulders **11** to form laterally extending tabs **15** for receiving these compensators. FIGS. 4 and 5 show two different sized compensators either of which may be attached to the dividers. As there shown, the compensators **13** are comprised of two flat plate members **16, 17** that are spaced from each other by partition members **18, 19**. Between these partition members, an opening **20** of the same width and length as the tab **15** of the dividers is formed; however, the opening in the compensator is offset from its opposite ends so as to define two legs **21, 22** of unequal length. With this construction, the positioning of two like compensators on the tabs **15** of the divider changes the effective spacing of its shoulders from the bottom edge **12**; and this spacing may be further varied by reversing the connection of the compensators whereby a leg portion of different length faces the edge **12**.

In order to hold the dividers within the file housing against accidental removal as the orientation of the various filing material is changed or as different parts of the filed material are removed or relocated, each of the dividers are provided with locking means **23**. As shown in FIGS. 3 and 6, these locking members are formed in the tab portions **10** of the dividers and include an upwardly facing locking ledge **24**. These locking members may be formed in the tabs by punching a U-shaped slit in the tabs and forcing the material enclosed within the U laterally outwardly from the plane of the dividers.

The extent to which these locking members are forced outwardly of the divider will depend on the width of the slots **2** in the base member **1**. As shown in FIG. 6, the locking members are pressed outwardly by a predetermined distance such that the combined thickness of the divider and locking means as taken along a line **25–26** extending perpendicularly of the plane of the body portion of the divider is almost equal to the width of the slots **2**. The relationship between this thickness and the width of the slots **2** is such so as to permit withdrawal of the dividers when they are aligned generally vertically with respect to the base member. The center divider shown in FIG. 6 is in such a release position. The width of the slots **2** is, however, only slightly larger than the thickness taken along line **25–26** so that as soon as the divider is tipped into an inclined position with respect to the base member **1** as represented by the end dividers of FIG. 6, removal from the base member is prevented. With the dividers in this inclined position, the thickness of the divider and locking means as measured along a plane extending parallel to the base member **1** will now be defined by the length of the line **25–27** or **25–27'**. This distance, however, is greater than that as measured along line **25–26** since it represents the hypotenuse of a right triangle, **25, 26, 27**. In amended FIG. 6 the panel contacts the slot at **40** and line **25–40'** represents the effective thickness of the panel in this position; in accordance with the teachings of the present invention, the width of the slots **2** is made smaller than this effective thickness.

As shown in FIGS. 8 and 9, the dividers, when positioned within the file drawer **4** with the locking members engaged below the base member **1**, will have the positioning tabs **10** spaced from the bottom wall of the file drawer **4**. The flanges **3** of the base member are made sufficiently long for effecting this result and the space thereby provided between the base member and bottom of the drawer facilitates pivoting of the dividers when it is desired to remove them from the base member.

The system as described above is adapted for insertion into a conventional file cabinet drawer; however, in accordance with the teachings of the present invention, it is also contemplated that the filing system be constructed as a self-contained unit with its own housing. FIG. 9 is a fragmentary view of such a construction. As there shown, the filing system comprises a base member **28**, side walls **29** secured to the base member along downwardly extending edges **30** as by welding or other suitable means, and a bottom housing wall **31**. The housing wall is provided with a U-shaped portion **32** along opposite edges for providing a free space **33** in which the downwardly extending tabs **10** of the dividers may move and may be secured to the base member along the flanges **3** in the same manner as the side walls **29**.

With this description of these preferred embodiments of my invention in view, it will be apparent to those having detailed knowledge of previously known vertical filing equipment that my invention has numerous advantages which had not previously been obtained in combination and which may only now be realized by employing my invention.

A very significant feature is the fact that the bottom of the filing unit is completely flat throughout the extent of the drawer and there is not any object which must or does protrude into the space intended to receive filing material. This is in sharp contrast to the many of the prior vertical visible filing equipments which had structural devices protruding in from the bottom or sides of the drawer to support or maintain the position of the rigid supporting dividers which are essential to the widely used vertical visible system of filing documents. It also contrasts with other known equipment in which the filing drawers are substantially wider than the documents intended to be filed because of the false side wall structures required to contain divider supporting means. The interlocking tab and slot means I have invented not only leads directly to

the foregoing features but it also provides means for greater flexibility in the positioning of the vertical dividers along the length of the filing tray or drawer. It should be apparent that the simple slots in the bottom of the tray or drawer may be placed closer together and thereby provide many more closely adjacent, but, nevertheless, discrete positions for vertical dividers. Not only may these slots be closely spaced while maintaining the structural integrity of the tray, but merely punching slots in the sheet metal bottom is far less costly and much easier to do than forming either separate or integral structures on the bottom of the tray. Equally significant advantages are, however, the ease and flexibility with which the interlocking tabs and slots permit the dividers to be positioned and removed and repositioned at will to meet the immediate needs and convenience of the person using the filed material. When the volume of material to be filed between adjacent dividers is small, the dividers may be readily placed in immediately adjacent, closely spaced slots to provide full support for even a few sheets of paper without their curling upwards as they would if placed between more widely separated dividers. Moreover, the bottom edges of the dividers fit flush against the bottom of the tray so paper cannot slide under a divider into an adjacent compartment.

A further advantage of my invention is that, while the tabs on the bottom edges of the dividers are firmly locked in their respective slots in every position within the scope of incline of the dividers the dividers are readily removable without the necessity of any separate mechanical operation to unlock them. To remove a divider, it is merely necessary to move that divider into a substantially vertical position and lift it straight up. This feature not only permits quick and easy repositioning of the dividers to accommodate them to the varying requirements of the filed materials, but it also permits the person working with the filed material to remove entire segments of the filed material to another work area or to another file tray with the aid of one or more of the rigid dividers which provide support for the removed material and help to keep it in good order during the transfer.

A further feature of my invention and of the particular embodiments described above is that the combination of the tab and slot positioning means for the vertical dividers together with the means on the lateral margins for defining the limits of the scope of incline of the individual dividers keeps the filed material in perfect order in an up-right position even when the filed material occupies only part of the capacity of a filing drawer. Also, the scope of the V defined by two adjacent dividers, one inclined forwardly and one inclined backwardly, is positively maintained at the most convenient angle so that the filed material is conveniently accessible to the person observing it.

The foregoing description of particular embodiments of the invention and of its individual and combined advantages, are given for purposes of illustration; it should be understood, however, that various changes may be made without departing from the scope of the invention as defined in the following claims.

I claim:

1. In a filing system including a file housing having a bottom and opposed side walls with free top edges, the improvement comprising:

(a) a base member having an upper supporting surface, said base member being positionable within said file housing, said supporting surface being spaced above the bottom of said housing and having at least one pair of openings extending therethrough, and

(b) at least one divider comprising a flat, semi-rigid plate having upper and lower portions, being removably positioned on said base member, and adapted to be inclined on said base member, said divider having:

(1) a pair of positioning tabs extending downward from and integrally with the lower portion of the plate in the same plane thereof, the tabs spaced apart to be in registry with and disposable through said pair of openings in said base member,

(2) shoulder means extending from each side of the plate and adapted to overlie each side wall of said housing, the lower portion of each shoulder means engageable with the top edge of a side wall, and

(3) locking means within each positioning tab, comprising a generally rectangular locking tab having upper and lower portions, the lower portion being integral with and in the plane of each positioning tab, the upper portion being formed from an inverted U-shaped cut in the positioning tab and being displaced out of both the surface and the plane of the positioning tab, the top edge of the locking tab defining in cross-section a substantially straight line approximately equal in length to the thickness of the tab, and extending generally normal to the plane of the positioning tab, the closed portion of the inverted U-cut defining a generally straight line the combined thickness of each divider and its associated locking means as measured along a plane normal to the plane of the plate, being less than the corresponding dimension of the opening in said base member, only when said divider is positioned in a plane extending substantially normal to the plane of said base member.

2. The improvement in a filing system according to claim 1 wherein each shoulder means of the divider comprises:

(a) a laterally extending tab formed integrally with and in the same plane as said plate, and

(b) a separate elongated compensator having a body part, opposed ends, and an opening offset centrally of the ends, providing legs of unequal lengths, the compensator being removably positionable on said divider with a shoulder tab extending into said offset opening and with either of the unequal legs extending downward establishing a selected distance between the lower portion of the shoulder means to the lower portion of the divider plate.

3. The improvement in a filing system according to claim 2 wherein said compensator comprises a pair of spaced plates joined by a pair of rib portions spaced from each other and the pair of rib portions being spaced from the ends of the plates, thus defining between the ribs said opening which is offset from the ends of said plates, the space between the plates conforming to the thickness of the shoulder tab which is insertable into said opening.

4. In a filing apparatus for removable installation into a standard filing cabinet drawer, said drawer having a bottom and spaced side walls with free top edges, the improvement comprising:

(a) a base member having a flat, rigid, upper supporting surface and a pair of flanges extending downwardly therefrom for engaging the drawer bottom and spacing said support surface from the bottom, said surface having at least one pair of spaced openings extending therethrough,

(b) at least one divider comprising a flat, semi-rigid plate having upper and lower portions, being removably positionable on said base member, and adapted to be inclined on said base member, said divider having:

(1) a pair of positioning tabs extending downward from and integrally with the lower portion of the plate in the same plane thereof, the tabs spaced to be in registry with and disposable

through said pair of openings in said base member,

(2) shoulder means extending from each side of the plate and adapted to overlie each side wall of said drawer, the lower portion of each shoulder means engageablee with the top edge of a side wall, and

(3) locking means within each positioning tab comprising a generally rectangular locking tab having upper and lower portions, the lower portion being integral with and in the plane of each positioning tab, the upper portion being formed from an inverted U-shaped cut in the positioning tab and being displaced out of both the surface and the plane of the positioning tab, the top edge of the locking tab defining in cross-section a substantially straight line approximately equal in length to the thickness of the tab, and extending substantially normal to the plane of the positioning tab, the closed portion of the inverted U-cut defining a generally straight line the combined thickness of each divider and its associated locking means as measured along a plane normal to the plane of the plate, being less than the corresponding dimension of the opening in said base member, only when said divider is positioned in a plane extending substantially normal to the plane of said base member.

5. The improvement in a filing system according to

claim 4 wherein each shoulder means of the divider comprises:

(a) laterally extending tab formed integrally with and in the same plane as said plate, and

(b) a separate elongated compensator having a body part, opposed ends, and an opening offset centrally of the ends, providing legs of unequal lengths, the compensator being removably positionable on said divider with a shoulder tab extending into said offset opening and with either of the unequal legs extending downward establishing a selected distance between the lower portion of the shoulder means to the lower portion of the divider plate.

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