May 14, 1963 R. J. VALENTINE 3,089,744

DRAWER FOR CABINETS

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FIG. 1.

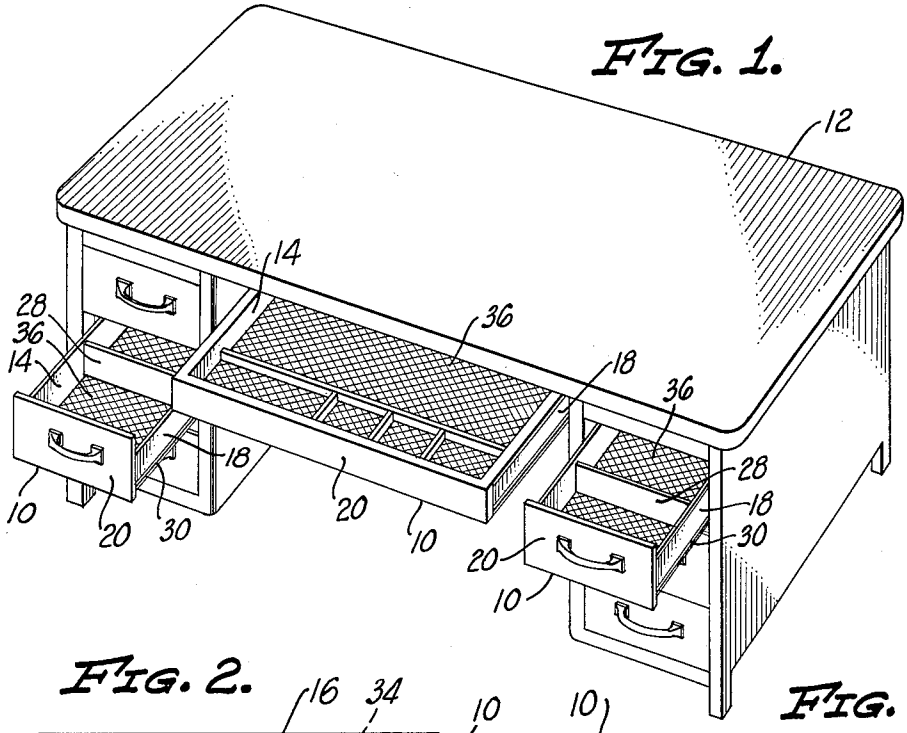


FIG. 2.

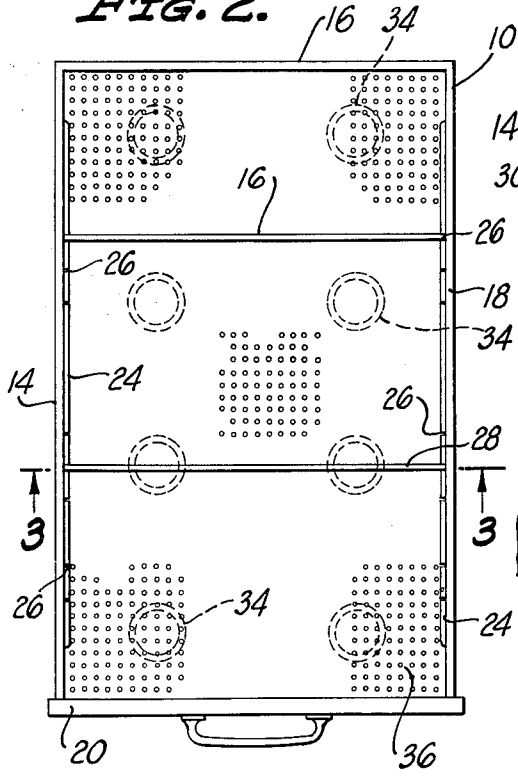


FIG. 3.

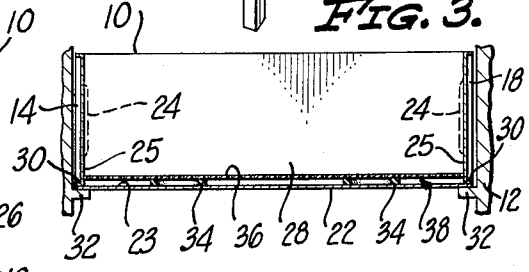
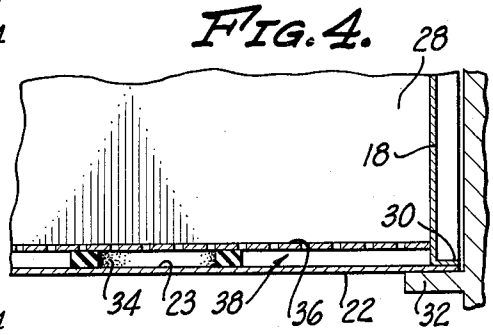


FIG. 4.



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FIG. 5.

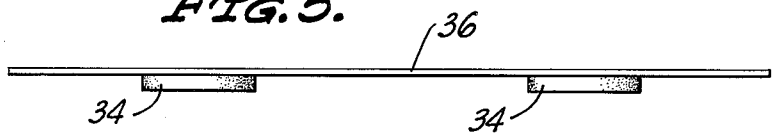


FIG. 6.

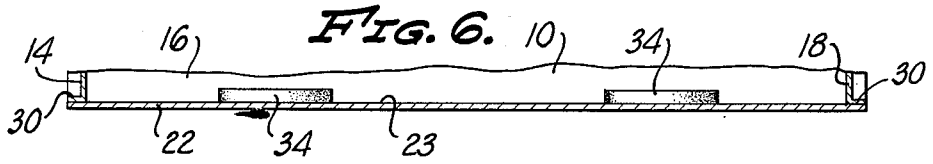


FIG. 7.

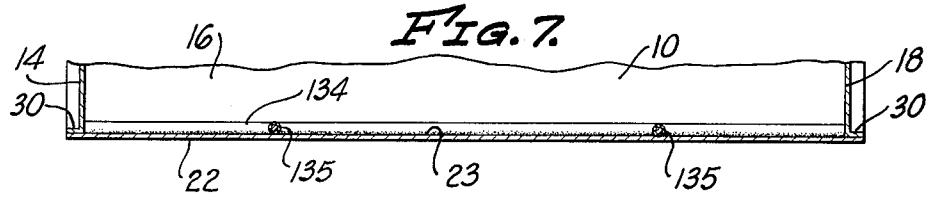


FIG. 8.

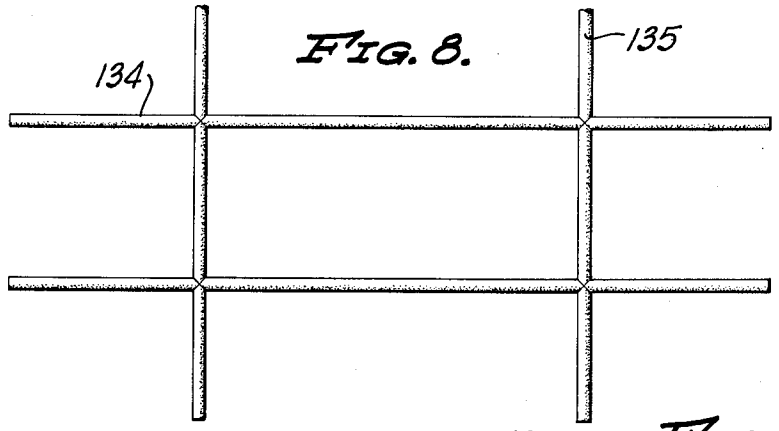


FIG. 9.

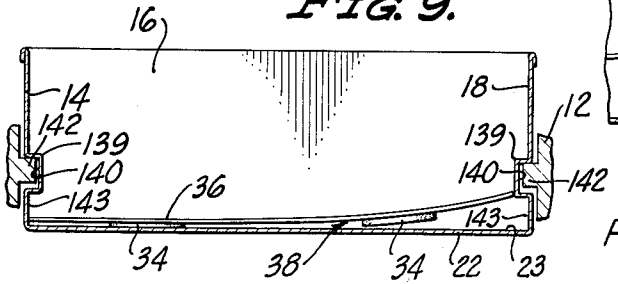
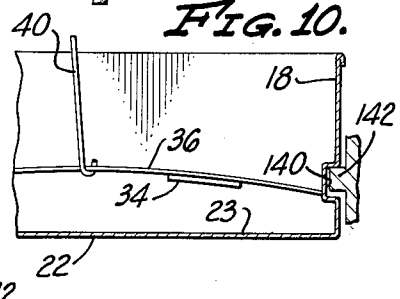


FIG. 10.



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DRAWER FOR CABINETS

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Filed Dec. 13, 1960, Ser. No. 75,608
5 Claims. (Cl. 312—229)

This invention relates to drawers and more particularly to a drawer having a perforated false bottom located therein in order to permit residue and other small debris to filter through such perforations in response to the normal to-and-fro movement of the drawer.

Many desk or cabinet drawers have heretofore merely provided four sides and an impervious bottom wall. As such drawers are used, residue such as erasure particles, pencil shavings, chalk dust, etc., accumulates on the bottom wall, creating both an unsightly appearance and a cluttered working area. Other drawers have provided perforated bottom walls and have included large receptacles positioned therebeneath which occupy a great volume of unused space, making the drawers somewhat cumbersome to handle.

It is an object of this invention to provide a drawer including a removable perforated means for filtering out residue and small debris that accumulate therein, thereby maintaining a clean uncluttered working area within such drawer.

It is another object of this invention to provide a drawer including a removable perforated false bottom for filtering out residue and small debris in which the maximum volume of the drawer is still available for storage purposes.

Another object of this invention is to provide a drawer having four sides, an impervious bottom wall, and a removable perforated sheet spaced slightly above the bottom wall for filtering out residue and small debris that accumulate in such drawer.

A further object of this invention is to provide a drawer having a perforated sheet spaced slightly above the bottom wall thereof and through which small debris is sifted in response to the normal to-and-fro movement of such drawer.

Another important object of this invention is to provide a drawer having an impervious bottom wall and a perforated sheet positioned slightly thereabove wherein spacing support elements are distributed throughout the area between the perforated sheet and bottom wall.

Still another important object of this invention is to provide a drawer having four sides, an impervious bottom wall, means on at least two opposed sides for slidably mounting the drawer within a desk or the like to move to-and-fro in a horizontal path, inwardly extending projections spaced above said bottom wall in the two opposed sides, and a perforated sheet of a size to completely cover the bottom wall and being sufficiently resilient to be bent past the inwardly extending projections on the two opposed side walls.

A still further object of this invention is to provide as an article of manufacture a false bottom for a drawer comprising a resilient perforated sheet having a plurality of support elements adhered to and distributed throughout the bottom surface of the sheet to space same above the bottom wall of the drawer. These support elements are preferably formed of resilient material particularly in conjunction with metal furniture where they silence and cushion the dropping of items into the drawer and also support the perforated sheet resiliently to facilitate sifting of particulate debris therethrough.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. The drawing merely shows and the description merely describes a preferred embodiment of the present invention, which is given by way of illustration or example.

In the drawings:

FIG. 1 is a perspective view of a desk employing a preferred embodiment of the invention;

FIG. 2 is a top plan view of a preferred embodiment of the invention;

FIG. 3 is a cross-sectional view taken along the arrowed line 3—3 of FIG. 2;

FIG. 4 is a fragmentary enlargement of a portion of FIG. 3;

FIG. 5 is an end elevational view of a perforated sheet having support elements secured thereto;

FIG. 6 is a fragmentary cross-sectional view of a drawer having the support elements secured thereto;

FIG. 7 is a fragmentary cross-sectional view of a drawer showing an alternative form of support element placed therein;

FIG. 8 is a fragmentary top elevational view of an alternative form of spacing element;

FIG. 9 is a cross-sectional view of another embodiment of the invention showing the perforated sheet being deformed during the installation thereof; and

FIG. 10 is a fragmentary view of the invention similar to FIG. 9 showing the perforated sheet being removed therefrom.

Referring to the drawings, FIGS. 1, 2, and 3 exhibit a drawer 10 to be utilized in conjunction with an enclosure such as a desk or cabinet 12. The drawer 10 includes four sides 14, 16, 18 and 20 which define a rectangular area spanned by an impervious bottom wall 22 having a top surface 23. The opposed parallel sides 14 and 18 each provide an inwardly indented longitudinal projection 24 spaced above the top surface 23 of the bottom wall 22, providing a sheet receiving space 25 therebetween. As shown, the projection 24 may include spaced vertical slots 26 for receiving and supporting vertical partitioning members 28 within the drawer 10. Extending longitudinally along the lower edges of the exterior surfaces of the opposed sides 14 and 18 are outwardly extending horizontal flanges 30 which serve as means for mounting the drawer 10 on a track 32 or the like provided by the desk 12 to enable such drawer to slide to-and-fro in a horizontal plane.

Spaced a small fraction of an inch above the top surface 23 of the impervious bottom wall 22 by a plurality of support elements 34 is a flat perforated resilient sheet 36 having a large number of holes that are preferably no larger than about one-eighth inch across. The support elements 34, preferably made of rubber or other resilient material, are shown as being of circular or ring shape and as having an external diameter very much greater than their vertical thickness (see FIGS. 2, 3 and 4). Such support elements 34 are distributed throughout the area between the bottom wall 22 and the perforated resilient sheet 36 and may be secured by adhesive or otherwise to either the top surface 23 of the bottom wall 22 or the bottom of the resilient sheet 36, as shown in the alternative by FIGS. 5 and 6.

The perforated resilient sheet 36 is of a size to completely cover the aforementioned impervious bottom wall 22. It is sufficiently resilient to flex and bend past the inwardly indented longitudinal projections 24 during its installation within the drawer 10. When installed within the drawer 10, the perforated resilient sheet 36 and the top surface 23 of the bottom wall 22 define a shallow dust space 38 therebetween which extends over substantially the entire drawer area and which is maintained at a fixed height by the spacing properties of the spaced support elements 34.

FIGS. 7 and 8 exhibit an alternative embodiment of the support elements formed by a wire grid **134**, coated with a resilient jacket **135** such as rubber or plastic, positioned on the top surface **23** of the bottom wall **22** for spacing the perforated sheet **36** upwardly therefrom. The grid can be secured to the top surface **23** or to the bottom surface of the perforated sheet but is usually a separate element not attached to either surface.

In FIG. 9 the opposing sides **14** and **18** of the drawer **10** are each shown as providing an inwardly indented longitudinal projection **139** forming an outwardly opening mounting groove **140** for slidably riding on a track **142** or roller provided by the desk **12**. Further, FIG. 9 shows the resilient perforated sheet **36** being flexed to bend past the mounting projections **139** during installation thereof, the sheet **36** then flattening with its edges extending into sheet receiving spaces **143** below the projections **139**.

In actual operation the resilient support elements **34** are initially secured to either the top surface **23** of the bottom wall **22** or to the bottom of the perforated sheet **36**. The resilient perforated sheet **36** is then positioned within the drawer **10** with one edge in one of the sheet receiving spaces **25** or **139** and its other edge resting on the opposite projection **24** or **139**. By pressing downward on the sheet it will flex and become sufficiently narrow to pass such opposite projection and then resume its flat form, being then spaced slightly upwardly from the bottom wall **22** by the resilient support elements **34**.

As miscellaneous articles are placed in the desk or cabinet drawer **10** during normal usage, they are positioned on the resilient perforated sheet **36**. During the course of usage residue and, in general, small particulate debris will accumulate on the sheet. With the normal to-and-fro sliding motion of the drawer **10** in a horizontal plane, the aforementioned residue will be shifted about and will eventually fall through the perforated sheet **36** and be collected in the dust space **38** defined between the sheet **36** and the top surface **23** of the bottom wall **22**. In addition, the resiliency of the sheet **36** between the support elements and the resiliency of the support elements **34** themselves permit the perforated sheet **36** to move slightly in an up and down direction when articles are dropped or placed within the drawer **10**, thereby aiding in dislodging any residue that might have lodged on the perforated sheet **36** and not filtered through during the normal sliding of such drawer.

In general, the filtering of residue by the resilient perforated sheet **36** serves to keep the exposed interior of the drawer **10** substantially free and clear of the small debris that would normally be collected therein. This small debris is collected in the dust space **38** substantially hidden from the eyes of the user while still permitting maximum storage area within the drawer **10**. From time to time, however, the dust space **38** will become contaminated with the collected residue and should be emptied. Cleaning can usually be effected by bringing a vacuum cleaner hose nozzle close to the sheet **36** without removing it from the drawer. In other instances the resilient perforated sheet **36** can be removed, as by inserting any hooked element **40** (FIG. 10) near the center of such perforated sheet and lifting upwardly, thereby causing the edges of the resilient sheet **36** to bend downwardly a sufficient distance to again reduce the width to permit the resilient sheet **36** to pass the projections **24** or **139** in the sides **14** and **18** of the drawer **10**. Once the resilient perforated sheet **36** is removed, the collected residue may then be emptied from the drawer **10** by simply inverting the drawer and shaking out such residue.

Although the drawer **10** has been employed here with a conventional desk **12**, the structure is equally applicable to any situation where a drawer is positioned to slidably move to-and-fro in a horizontal plane. Further, it will be understood that various modifications, minor changes, and substitutions may be incorporated without departing from the spirit of the invention as defined by the claims which follow.

I claim:

1. In combination: a drawer and means for mounting same to slide to-and-fro in a horizontal path, said drawer having four sides and an impervious bottom wall having a top surface; a flat perforated sheet sized to completely cover said bottom wall between said sides; and thin resilient flexible support elements distributed throughout the area of said sheet between the bottom of said sheet and the top surface of said bottom wall supporting said sheet in said drawer a small fraction of an inch above said bottom wall to provide a dust space therebetween, receiving dust and particulate debris filtered through said perforated sheet by the to-and-fro movement of said drawer, said resilient elements providing a cushioned support for said perforated sheet.

2. A drawer as defined in claim 1 in which said support elements are individual circular elements adhered to one of said surfaces.

3. A drawer as defined in claim 1 in which opposed sides of said drawer have inwardly extending projections spaced above said top surface of said bottom wall providing a sheet receiving space therebetween, said sheet being of a width slightly less than the width of said sheet receiving space but greater than the distance between said projections, said sheet being made of flexible material to bend and reduce its width sufficient to pass said projections during insertion of said sheet into said drawer.

4. In a drawer the combination of: four sides and an impervious bottom wall having a top surface; means for mounting said drawer to slide to-and-fro in a horizontal path; a flat, perforated, resilient, flexible sheet sized to completely cover said bottom wall between said sides; and thin, resilient, flexible, support elements distributed throughout the area of said sheet between the bottom of said sheet and the top surface of said bottom wall, supporting said sheet in said drawer a short distance above said bottom wall to provide a dust space therebetween, receiving dust and particulate debris filtered through said perforated sheet by the to-and-fro movement of said drawer and the slight vertical movement of said sheet resulting from the resiliency of said support elements and the resiliency of the sheet at positions therebetween.

5. In a drawer the combination of: four sides and an impervious bottom wall having a top surface; means for mounting said drawer to slide to-and-fro in a horizontal path; a flat, perforated, resilient, flexible sheet sized to completely cover said bottom wall between said sides; and thin, resilient, flexible, support elements distributed throughout the area of said sheet between the bottom of said sheet and the top surface of said bottom wall, supporting said sheet in said drawer a short distance above said bottom wall to provide a dust space therebetween, said support elements having a ring shape with an external diameter very much greater than the vertical thickness thereof.

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