

Jan. 5, 1971

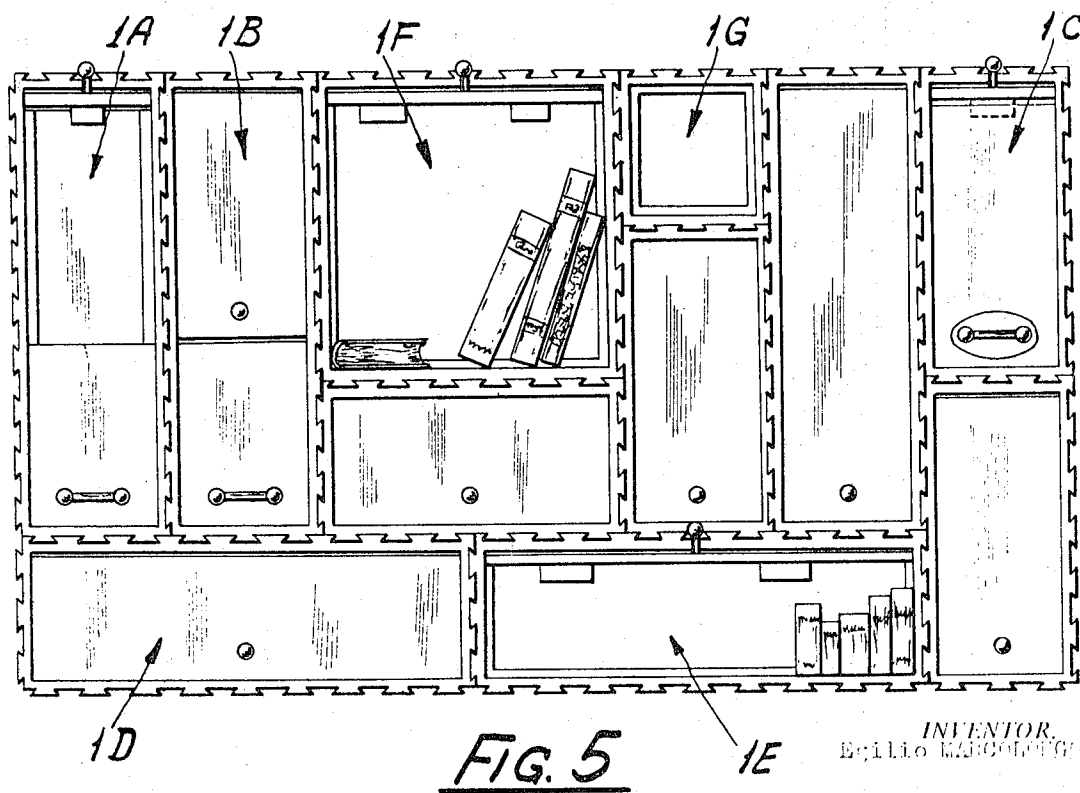
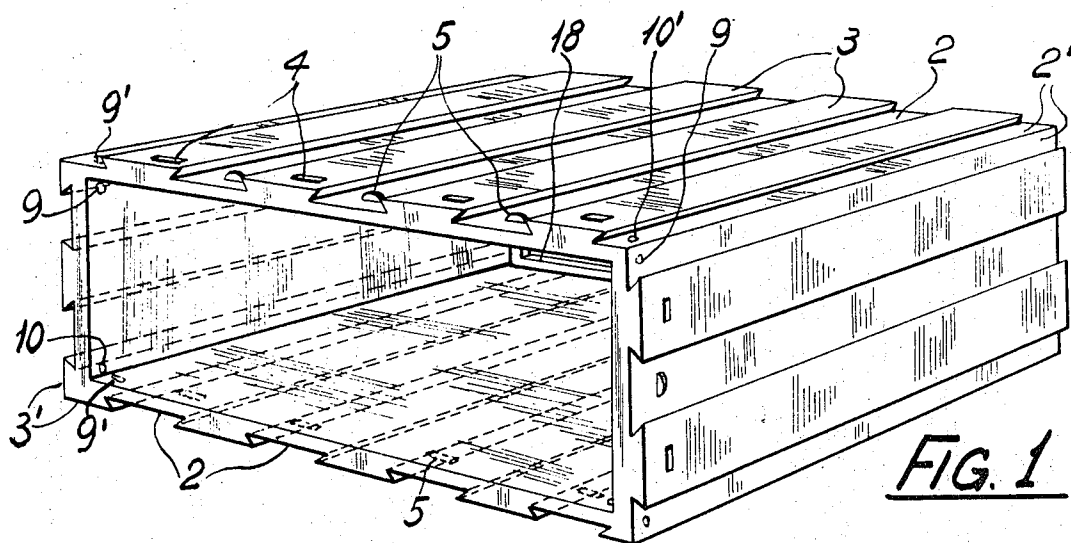
E. MARCOLONGO

3,552,817

COMPARTMENTED STORAGE CABINET

Filed Sept. 3, 1968

3 Sheets-Sheet 1



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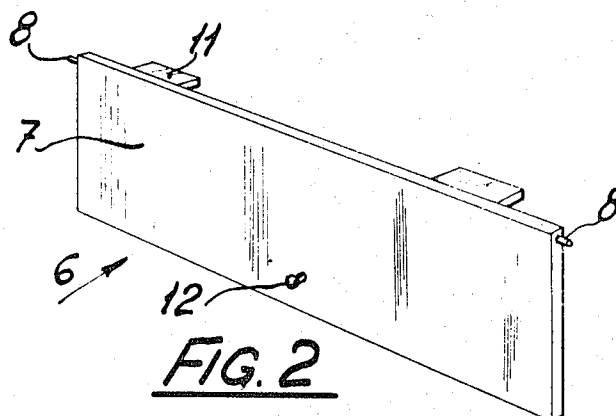
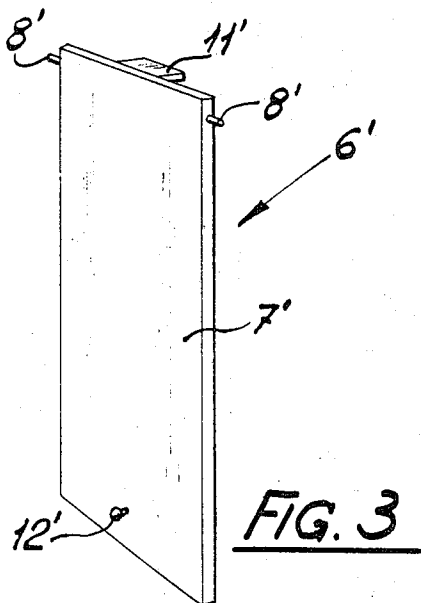
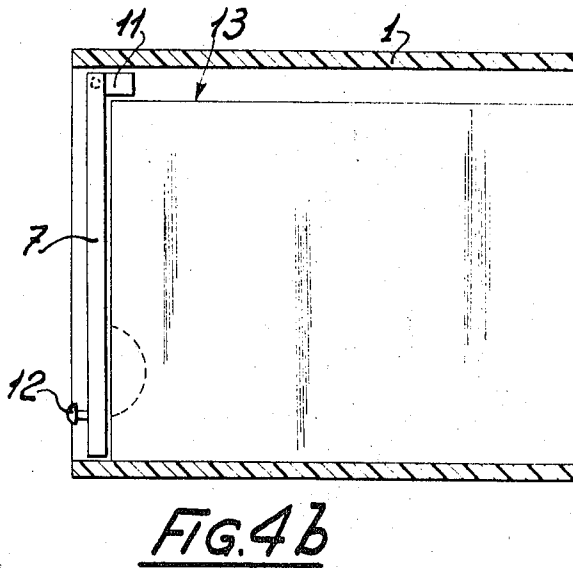
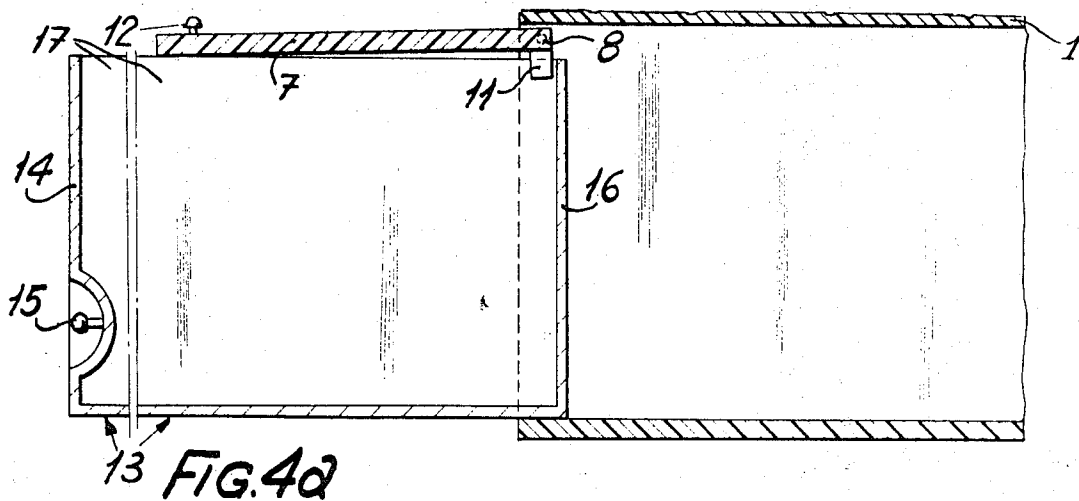
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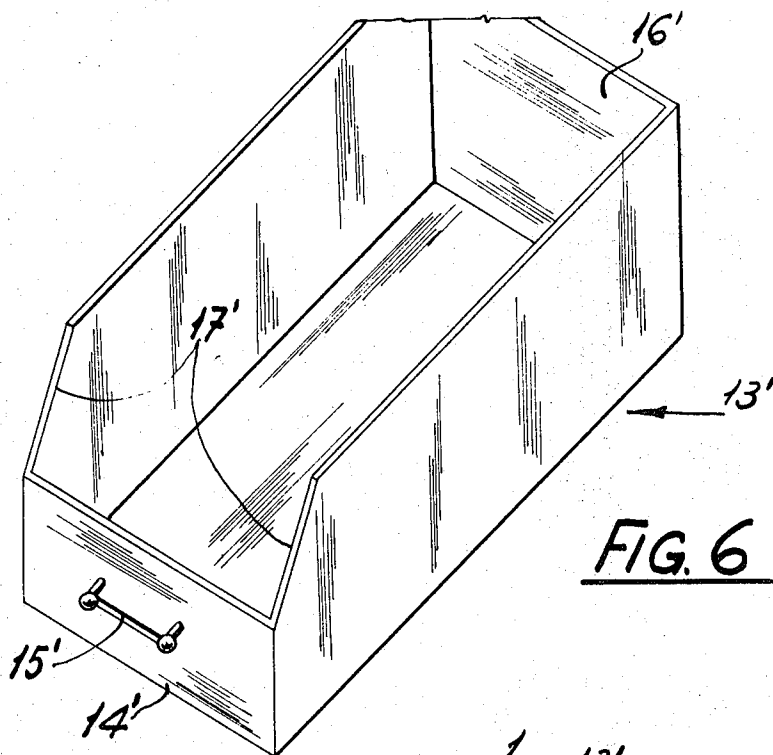


FIG. 6

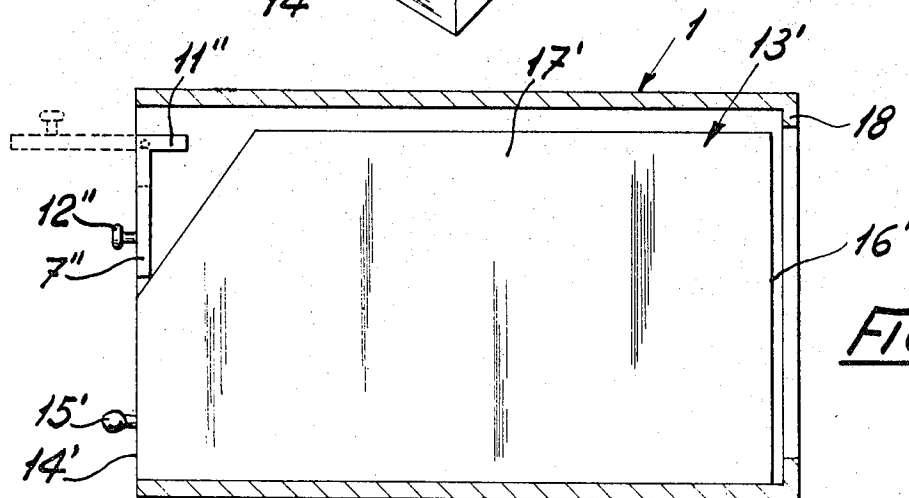


FIG. 7

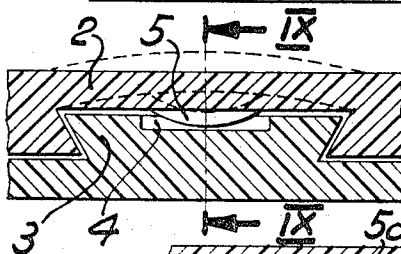


FIG. 8

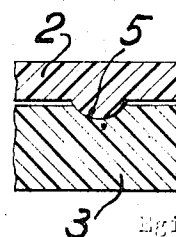


FIG. 9

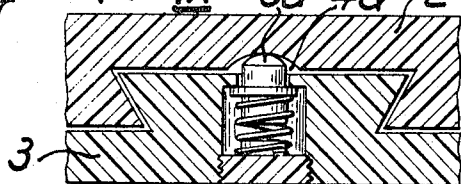


FIG. 10

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3,552,817

COMPARTMENTED STORAGE CABINET

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Int. Cl. A47b 87/02

U.S. Cl. 312—107

10 Claims

ABSTRACT OF THE DISCLOSURE

Storage cabinet assembled from interfitting, peripherally fluted and ribbed prismatic units forming compartments of rectangular cross-section with hinged doors at their front ends and, if desired, drawers slidable in the several compartments, adjacent units being yieldably interlocked by mating formations on their dovetailed ribs and flutes.

My present invention relates to a storage cabinet assembled from interfitting, peripherally fluted and ribbed four-sided prismatic units which form compartments of rectangular cross-section adapted to be stacked and/or juxtaposed in various combinations, preferably with interchangeability of units of different heights and/or widths to provide a variety of structures satisfying diverse storage requirements.

In commonly owned British Patent No. 1,079,472 there has been disclosed an assembly of this general type whose differently proportioned units have height and width dimensions which are multiples and submultiples of one another so as to be juxtaposable and/or superposable in various groupings; to facilitate their assembly, the units are provided at their corners with half-grooves and half-tongues whereby adjacent units complement each other for engagement with a complete tongue or groove of a further unit.

The tongues or ribs and the grooves or flutes of these units advantageously have a dovetail shape so as to prevent their separation in a transverse direction; thus, the units may be assembled and disassembled only by longitudinal sliding. To establish a position of mutual alignment, the tongues and grooves of this prior construction did not extend completely along the sides of the prism but terminated short of its front end, the blind ends of the grooves forming stops for the confronting ends of the associated ribs. Thus, as shown in that British patent, two adjoining sides of each unit were grooved while the two other sides were ribbed, thereby limiting the manner in which a number of such units could be assembled.

An object of the present invention is to provide an assembly of this type whose units offer more possibilities of superposition and/or lateral juxtaposition while retaining the ability of being indexed in a position of mutual alignment to preserve a straight front.

Another object is to provide a composite storage cabinet whose compartments, whether used with or without inserted drawers, exhibit a substantially uniform appearance in a position of closure.

It is also an object of my invention to provide improved means in such compartments for arresting a drawer in a partly extracted position to prevent its untimely removal from the cabinet with possible spillage of its contents.

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In accordance with an important feature of this invention, I provide the four sides of each unit with dovetailed ribs and flutes extending over the entire length of these sides whereby any side of any unit may be interfitted with any side of any other unit. In order to keep these units properly aligned, some or all of their matingly engaging flutes and ribs may be provided with complementary transverse formations for releasably retaining the units in a predetermined relative position, generally a position in which their forward ends lie in a common plane. These formations may be depressions on the tops of the ribs and fixed or retractable projections on the bottoms of the grooves; the use of fixed projections of limited height is possible if the units consist of synthetic resin or other deformable material.

According to another feature of my invention, doors are hinged to the tops of the forward ends of some or all compartments and are forwardly swingable to give access to their interior. If the compartment has a drawer, the door is advantageously provided with an abutment which normally (i.e. with the door hanging down in closed position) lies flat against the top of the compartment, thereby preventing the door from being swung inwardly against the possible fragile contents; when the door is swung forwardly, however, the abutment extends downwardly into the path of an upstanding rear wall of the drawer to limit its forward movement. If the door in its position of closure covers substantially the entire forward end of the compartment, the drawer will lie behind it; yet in many instances it will be convenient to let the front wall of the drawer normally occupy the lower part of this forward end and to foreshorten the swinging door to let it obstruct only the remaining clearance. In the latter case the drawer may have rising sidewalls which, upon partial extraction of the drawer from the cabinet, swing the door forwardly to interpose its abutment into the path of the rear wall of the drawer while exposing its contents.

The above and other features of my invention will be described in greater detail hereinafter with reference to the accompanying drawing in which:

FIG. 1 is a perspective view of a compartment-forming unit of a storage cabinet according to the invention;

FIGS. 2 and 3 are perspective views of doors adapted to be used with the unit of FIG. 1;

FIG. 4a is a fragmentary view, in longitudinal section, of the unit of FIG. 1 with the door of FIG. 2 swung open and with a drawer pulled out;

FIG. 4b shows the elements of FIG. 4a in their closed position;

FIG. 5 is a front view of a cabinet assembled from a number of units of the type shown in the preceding figures;

FIG. 6 is a perspective view of another drawer forming part of the assembly of FIG. 5;

FIG. 7 is a view similar to FIG. 4b, showing the drawer of FIG. 6 in a compartment closed by a door of reduced height;

FIG. 8 is an enlarged detail view taken in cross-section at a dovetail joint formed between two adjoining units;

FIG. 9 is a transverse sectional view taken on the line IX—IX of FIG. 8; and

FIG. 10 is a view similar to FIG. 8, showing a modification.

In FIG. 1 I have shown a unit 1 adapted to be used as a component of a compartmented storage cabinet as illustrated in FIG. 5. Unit 1 is a prismatic box with open front and rear ends of rectangular profile, the outer surface of

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each side being formed with alternating flutes 2 and ribs 3 of complementary dovetail shape extending over the full length of the box; the four longitudinal edges of the prism form the junctions of half-size flutes 2' and/or half-size ribs 3' which can be complemented by similar formations of adjoining units, as seen in FIG. 5, to mate with their counterparts on still further units for three-way interlocking. The height of the box represents a unit size, its width being a multiple (here double) of that size; thus, for example, the narrow faces of two such units can be fitted side by side onto one of the broad faces of the box shown in FIG. 1.

Near the forward end of box 1, the tops of its ribs 3 are formed with transverse depressions 4 while the bottoms of the flutes 2 are provided with corresponding projections 5; when adjacent units are interfitted and shifted into proper mutual alignment, their formations 4 and 5 interlock so as releasably to retain them in that position. FIGS. 8 and 9 more clearly show the projections 5 as ridges integral with the groove bottoms; FIG. 8 also illustrates an elastic deformation of the grooved box portion, which preferably consists of plastic material, just before the ridge 5 snaps into the depression 4 or upon subsequent disengagement thereof. As illustrated in FIG. 10, the fixed ridge 4 may be replaced by a spring-loaded indexing stud 5a entering a shallow, spherically curved recess 5a from which it is cammed out upon forcible relative shifting of the respective units; this arrangement is particularly suitable if the material of the boxes is of limited deformability. Naturally, not all the flutes and ribs on any side of the box need to be provided with such indexing formations.

FIG. 1 also shows pairs of aligned horizontal holes 9, 10 and vertical holes 9', 10' provided in the box walls near the corners of their front ends. One of these four pairs, i.e. the one which happens to be at the top of the compartment in the chosen box position (here the holes 9), is designed to receive a pair of hinge pintles 8 (FIG. 2) or 8' (FIG. 3) on a leaf 7 or 7' of a horizontal or vertical door 6 or 6'. These door leaves are formed near their upper edges with rearwardly pointing fins 11 or 11' which prevent their inward swing and also serve as abutments for the back walls of associated drawers as more fully described hereinafter with reference to FIGS. 4a, 4b and 7; knobs 12 or 12' near their lower edges allow them to be pulled forwardly to give access to the associated compartments.

FIG. 4a shows the box 1 and its door leaf 7 hinged to it at 8, the leaf having been swung open to permit a partial extraction of a drawer 13 having a front wall 14 with a recessed handle 15 and a rear wall 16 coming to rest against the fin 11 as the leaf rides on the sidewalls 17 of the drawer. With the box frame projecting somewhat beyond the pivotal axis of the door, as shown, the leaf 7 can swing only slightly above the horizontal so that removal of the drawer 13 from the cabinet by straight forward sliding is positively prevented; only upon being tilted upwardly (clockwise) from the position of FIG. 4a can the drawer be fully detached from the unit 1. Often it will be sufficient to let the weight of the door leaf arrest the drawer as its wall 16 strikes the fin or fins 11; in that case the holes receiving the pintles 8 may be disposed as closely as desired to the front edge of the box frame, the drawer being then removable simply by an increased forward pull sufficient to raise the leaf 7 off the sidewalls 17 (cf. FIG. 7).

FIG. 4b shows the drawer 13 pushed back into its compartment, with the leaf 7 hanging down in front of it. Naturally, the underside of the drawer and/or the floor of the compartment may be provided with rails, rollers or the like to facilitate the sliding of the drawer as is well known per se.

FIG. 6 shows a modified drawer 13' having a lower front wall 14' with a handle 15' and sidewalls 17' rising to the height of the rear wall 16'. As illustrated in FIG.

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7, the drawer 13' of FIG. 6 can be received in unit 1 in essentially the same manner as drawer 13 of FIGS. 4a and 4b, with the difference that its front wall 14' normally lies in one plane with a foreshortened door leaf 7' covering only the upper part of the compartment entrance left free by the wall 14'. A knob 12" allows the leaf 7" to be lifted for limited access to the front portion of the retracted drawer; to expose the remainder of its contents, the drawer must be pulled out until its rear wall 16' strikes the fin 11" of leaf 7" as the latter is swung open (dot-dash lines) upon riding up the flanks of sidewalls 17'. A peripheral shoulder 18 at the rear of the unit (also partly visible in FIG. 1) serves as a backstop for drawer 13'.

The cabinet shown in FIG. 5 includes a pair of upright units 1A, 1B with partial doors and drawers of the type illustrated in FIGS. 6 and 7 in open and closed positions, respectively; another compartment 1C with an open door and a drawer as shown in FIG. 4a; two broadside units 1D (closed) and 1E (open) with doors of the type seen in FIG. 2; two units 1F, 1G with open compartments of square cross-section, the latter, smaller compartment being without a door; and several other compartments of different sizes and positions which may or may not have drawers behind their closed doors.

Modifications as to the number and dimensions of the flutes and ribs, the shape of the indexing formations and other details are, of course, possible without departing from the spirit and scope of my invention as defined in the appended claims.

I claim:

1. A storage cabinet comprising a plurality of inter-fitting four-sided prismatic units of rectangular vertical cross-section, each of said units forming at least one forwardly open compartment, the four sides of each unit being provided with dovetailed ribs and flutes extending over the entire length of said sides, the flutes and ribs of adjoining units matingly engaging one another and allowing said adjoining units to be longitudinally slid relatively to each other for mutual disengagement and re-engagement, at least certain of the matingly engaging ribs and flutes being provided with complementary transverse formations for releasably retaining said adjoining units in a predetermined relative position.

2. A cabinet as defined in claim 1 wherein said transverse formations are depressions and projections on the tops of the ribs and on the bottoms of the flutes, respectively.

3. A cabinet as defined in claim 2 wherein said projections are retractable.

4. A cabinet as defined in claim 2 wherein said projections are fixed, said units consisting of deformable material.

5. A cabinet as defined in claim 1 wherein at least one of said units is provided with a door hinged to the top of the forward end of its compartment.

6. A cabinet as defined in claim 5, further comprising a drawer slidably disposed in the last-mentioned compartment, said drawer having an upstanding rear wall, said door having an abutment normally lying flat against the top of the compartment but extending downwardly into the path of said rear wall upon a forward swing of said door.

7. A storage cabinet comprising a plurality of inter-fitting four-sided prismatic units of rectangular vertical cross-section, each of said units forming at least one forwardly open compartment, the four sides of each unit being provided with dovetailed ribs and flutes extending over the entire length of said sides, the flutes and ribs of adjoining units matingly engaging one another and allowing said adjoining units to be longitudinally slid relatively to each other for mutual disengagement and re-engagement, at least one of said units being provided with a door hinged to the top of the forward end of its compartment, and a drawer slidably disposed in the last-men-

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tioned compartment, said drawer having an upstanding rear wall, said door having an abutment normally lying flat against the top of the compartment but extending downwardly into the path of said rear wall upon a forward swing of said door.

8. A cabinet as defined in claim 7 wherein said door extends substantially entirely across said forward end in a normal position of closure, said drawer lying behind said door in said position of closure.

9. A cabinet as defined in claim 7 wherein said drawer has a front wall normally occupying a lower portion of said forward end, said door blocking substantially the remainder of said forward end in a position of closure in substantial alignment with said front wall.

10. A cabinet as defined in claim 9 wherein said drawer has rising sidewalls behind said door adapted to swing same forwardly upon a partial extraction of said drawer

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from the compartment whereby said abutment is interposed in the path of said rear wall.

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KENNETH DOWNEY, Primary Examiner

U.S. Cl. X.R.

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