

No. 651,739.

Patented June 12, 1900.

E. W. WOODRUFF.
PORTFOLIO DRAWER.
(Application filed July 1, 1898.)

(No Model.)

2 Sheets—Sheet 1.

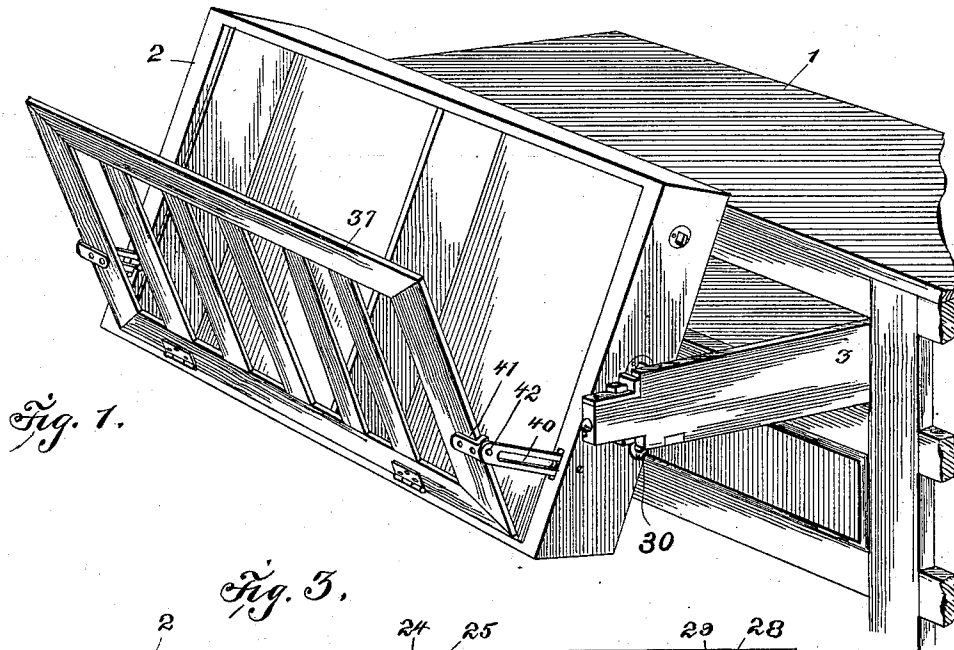


Fig. 1.

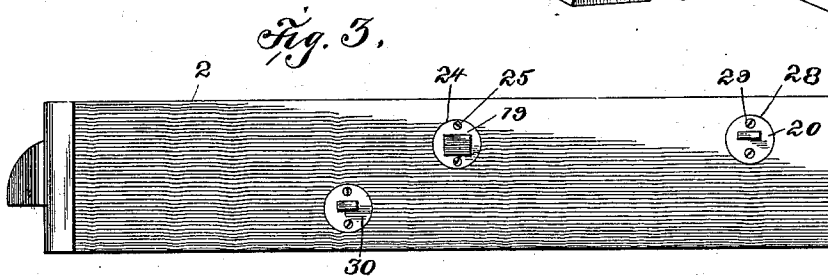


Fig. 3.

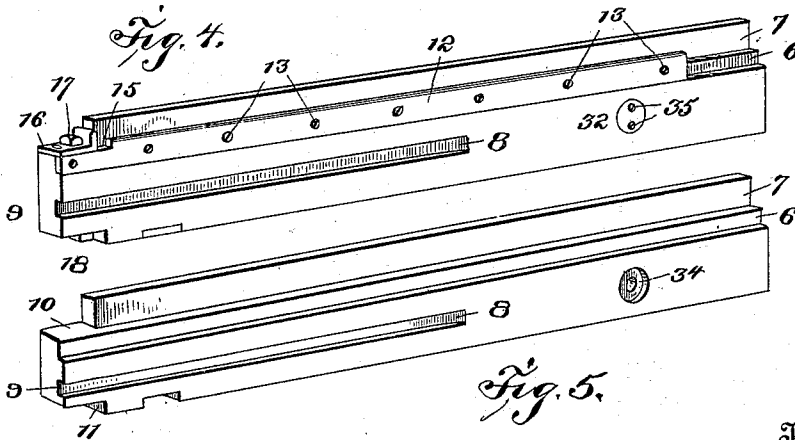


Fig. 4.

Fig. 5.

Witnesses
Wm. H. Edwards Jr.
Dora L. Stone.

Inventor
Edmund W. Woodruff
by *Jas. H. Vermilyea*
Attorney

No. 651,739.

Patented June 12, 1900.

E. W. WOODRUFF.
PORTFOLIO DRAWER.

(Application filed July 1, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.

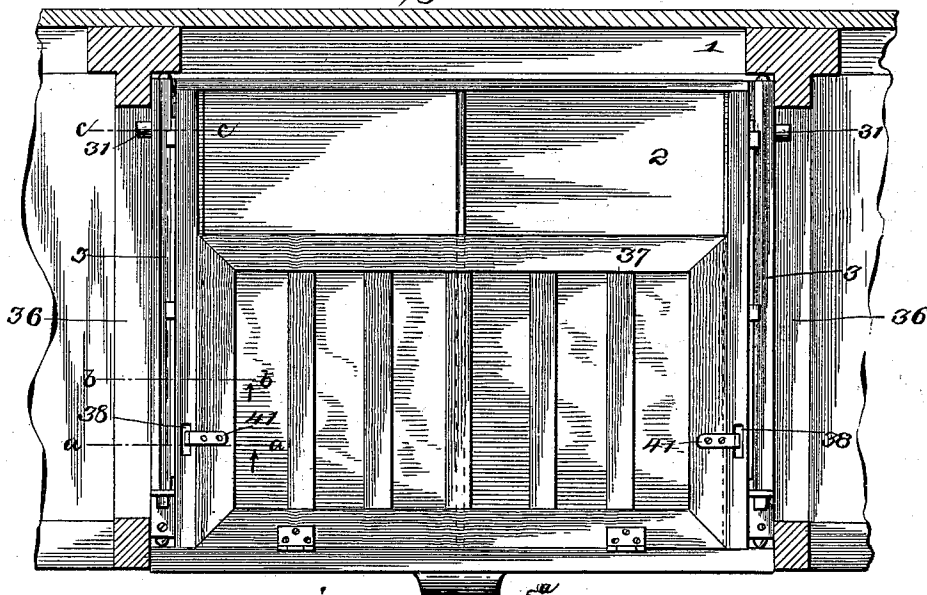


Fig. 6.

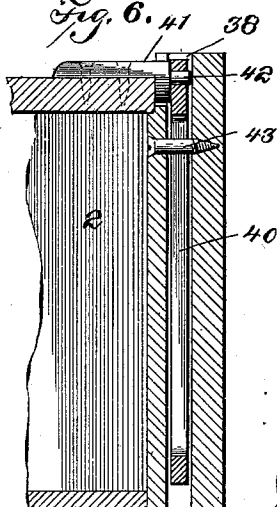


Fig. 7.

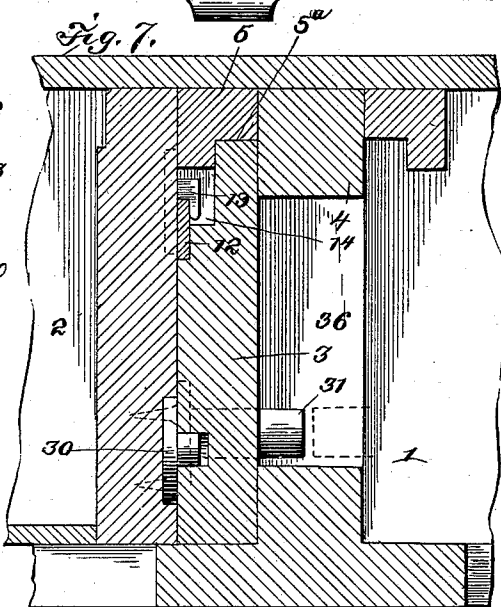


Fig. 8.

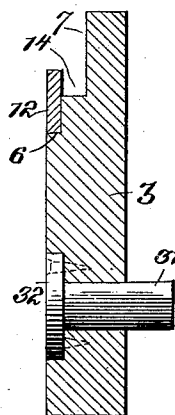


Fig. 9.

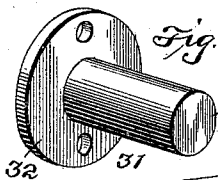


Fig. 10.

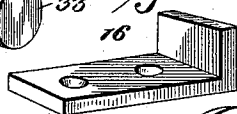


Fig. 12.

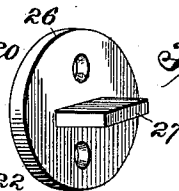
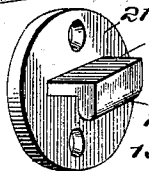


Fig. 11.



Witnesses
W. H. Edwards, Jr.,
Dora L. Stone.

Inventor
Edmund W. Woodruff
by Jas. H. Vermilya
Attorney

UNITED STATES PATENT OFFICE.

EDMUND W. WOODRUFF, OF WASHINGTON, DISTRICT OF COLUMBIA.

PORTFOLIO-DRAWER.

SPECIFICATION forming part of Letters Patent No. 651,739, dated June 12, 1900.

Application filed July 1, 1898. Serial No. 684,975. (No model.)

To all whom it may concern.

Be it known that I, EDMUND W. WOODRUFF, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented a new and useful Improvement in Portfolio-Drawers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in furniture-drawers of that class known as "portfolio-drawers," designed especially for storing drawings, maps, engravings, or similar illustrations, and which are supported by slides adapted to be withdrawn from the case with the drawer and to support the latter in a tilted or inclined position for the purpose of enabling the operator to obtain ready access to and permit inspection of the contents of the drawer without removing the latter from the drawer.

The prime object of the present invention is to simplify and strengthen the supporting devices for drawers of this class, whereby to minimize the liability of breakage of the parts, to promote the convenience in the service of the drawer, and to cheapen the manufacture.

A further object of the invention is to provide means which assist in supporting the drawer on the slides and serve to positively arrest the tilting movement of the drawer on the slides, thus performing a twofold purpose.

A further object is to dispense with the use of wooden dowel-pins, now commonly used and which are open to the objection of breaking or of being battered off in service.

A further object of the invention is to provide stop devices for the hinged flap which are connected and arranged to fold with the flap compactly within the drawer itself, thereby preventing the stop devices from protruding beyond the flap in the act of folding the same within the drawer.

With these ends in view the invention consists of slides provided with track-rails and with guide-grooves which are parallel to said track-rails, drawer-irons adapted to travel on said rails and to limit the outward sliding movement of the drawer, and guide and stop devices carried on the drawer to travel in the

guide-grooves of the slides during the horizontal movement of the drawer and adapted to be withdrawn from the slides and to abut against the lower edge of the latter in the swinging movement of the drawer to arrest the latter and sustain it in an inclined suspended position between the slides.

The invention further consists in a drawer provided with channels or recesses, stop-links pivoted to the drawer-flap to fold and unfold therewith and arranged to play at all times within the channels or recesses of the drawer, and arresting pins or screws attached to the drawer across the channels or recesses therein to stop the outward movement of the flap.

The invention further consists of a drawer-slide having notches at its front end and a longitudinal rabbet on its face opposed to the drawer, a metallic track-rail attached to said rabbeted face of the slide, an angular stop fitted in one of the slide-notches in alinement with the track-rail and projecting above the face of the latter to lie in the path of the drawer-supporting iron which is adapted to traverse the track-rail, and a bolt which secures the angular stop firmly in place on the drawer-slide; and the invention further consists in the novel construction and arrangement of parts which will be hereinafter more fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a case with the slides and the drawer withdrawn therefrom. Fig. 2 is a horizontal sectional view through a portion of the case on a plane above one of the drawers thereof, showing the drawer and its supporting-slides folded compactly within the case. Fig. 3 is a view in side elevation of the drawer, showing the supporting-irons therefor. Fig. 4 is a detail perspective view of one of the slides looking at the inner face or side thereof which is to be presented to the drawer. Fig. 5 is a similar view of the slide with the track-rail, the angular stop, and the slide-stop detached from said rail. Fig. 6 is an enlarged detail sectional view through a portion of the

drawer, the stop-link, and a fragment of the drawer-flap, the plane of the section being indicated by the dotted line *a a* of Fig. 2. Fig. 7 is an enlarged detail sectional view through a portion of the case, a slide, a portion of the drawer, and the guides for the slide, showing the means for arresting the outward movement of the slide and the devices by which the drawer is slidably supported in the slide, the plane of the section being indicated by the dotted line *b b* of Fig. 2 looking in the direction indicated by the arrow. Fig. 8 is a transverse section through one of the drawer-slides on the plane indicated by the dotted line *c c* of Fig. 2, illustrating the stop by which the outward movement of the slide is arrested. Figs. 9, 10, 11, and 12 are detail perspective views of various forms of castings or irons for the drawer and the slide.

Like numerals denote like parts in each figure of the drawings.

1 designates a portion of the inclosing case. 2 is one of the drawers adapted to be housed therein, and 3 designates the slides to support the drawer. I have illustrated these parts as one exemplification of the invention; but it will be understood that the style of the inclosing case and the number of drawers employed are not material.

According to my invention each slide 3 of the pair provided for each drawer is arranged to have bearing throughout the entire length of the slide along its upper and lower edges in a guideway provided for its reception within the casing, and, as shown by Figs. 2 and 7, this guideway is formed by the rails 4 and 5. The rail 4 is arranged horizontally within the case for the slide 3 to travel against one face thereof, and the rail 5 is arranged parallel to and alongside of the rail 4 at the upper edge of the slide 3, the lower edge of the rail 5 being recessed, as at 5^a, (see Fig. 7,) for the reception of the rabbeted upper edge of the slide.

Each slide 3 of the pair provided for the support of the drawer is peculiarly fashioned for the reception of the track-rail and supporting devices for the drawer, reference being had more particularly to Figs. 4 and 5. Each slide has two rabbets 6 7 formed longitudinally therein on the inner face or that face which is presented next to the drawer, and the rabbet 6 is arranged below the rabbet 7. A longitudinal guide groove or channel 8 is also formed on the inner face of the slide below and parallel to the lower rabbet 6, and one end of this guide-groove extends or opens through the front end of the slide, as indicated at 9. The front end of the slide is notched or cut away at its upper corner, as at 10, and the lower corner is also notched or cut away at 11, whereby the slide is adapted to receive the angular stop-iron and its fastening-bolt, which are applied to the notched end of the slide to lie within the edges thereof

and enable the slide to travel in its guideway of the casing without hindrance from the devices which operatively support and limit the play of the drawer in the slide. In addition to having the rabbets and guide-groove formed in the slide it is provided with a bored cavity in rear of the guide-groove and below the rabbets for the reception of the slide-stop, to be hereinafter described. A metallic track-rail 12 is fitted to the lower rabbet 6 of each slide, and this track-rail extends nearly throughout the length of the slide, rests upon the rabbet 6 against the side of the rabbet 7, and projects a suitable distance above the latter, as shown by Fig. 8. This track-rail has numerous transverse openings through which are passed the screws 13, which fasten the track-rail firmly to the slide, and this rail is arranged to form a longitudinal channel 14 between its exposed upper edge, the rabbet 7, and the slide itself, (see Fig. 8,) in which channel 14 is adapted to travel the overhanging drawer-iron, which is adapted to engage with the track-rail to prevent the drawer-iron from disengaging from the rail when the drawer is pulled outward with the slide. The front end of the track-rail is notched at 15, and it extends below the notch 10 of the slide. Upon this notched end of the slide and the notched end of the track-rail is fitted the angular drawer-stop 16, (see Fig. 10,) which is cast in a single piece of metal and is secured in place by a vertical bolt 17. The horizontal member of this angular stop is fitted to the faces of the slide and the track-rail at the coincident notched ends 10 15 thereof, and the vertical member of the angular stop extends above the upper edge of the track-rail, so as to lie in the path of the drawer-iron and arrest the outward movement thereof, said angular stop lying within the limits of the slide to permit the latter to travel freely in the guideway of the casing. The angular stop is secured firmly in place on the slide by the bolt 17, which passes through the horizontal member of the stop and the projecting portion of the slide at the notched front end thereof, and on the lower end of this bolt is screwed the nut 18, which is housed within the notch 11 at the lower front corner of the slide. The bolt secures the angular stop so firmly in place that it cannot work loose and become detached under the impact of the drawer-iron when the drawer is pulled out suddenly and strikes with considerable force against the stop 16.

Each drawer is provided on the sides thereof with a series of supporting irons or castings. Two of these castings are indicated at 19 20 in Fig. 3 of the drawings, while the third drawer-iron is indicated by the numeral 30. The first-named drawer-irons 19 20 are attached to each side of the drawer to lie in the same horizontal plane and to fit slidably upon one track-rail 12 when the drawer is in a horizontal position; but the other iron 30 is adapt-

ed to travel in the guide-groove 8 and to be withdrawn from said groove when the drawer attains the limit of its outward movement between the slides, whereupon the iron 30 is adapted to pass through the open end 9 of the groove 8 and clear the slide, so as to permit the drawer to turn to an inclined position, whereby the iron 30 is adapted to swing with the drawer and abut against the lower edge of the slide, so as to limit the turning movement of the drawer on the slide and maintain the drawer in a position convenient to the operator in inspecting the papers, drawings, or other contents of the drawer, as represented by Fig. 1. The iron 19 has a disk 21, from which projects a plate 22, formed at its free edge with a depending lip 23, all cast in a single piece. The disk 21 of the iron is fitted in a cavity 24, which is bored in the side of the drawer, and this disk is fastened firmly in place by the screws 25. In like manner the drawer-iron 20 is formed with a disk 26 and a flat plate 27, and said iron is secured to the side of the drawer in the same horizontal plane as the iron 19 by fitting the disk 26 in a cavity 28, which is bored in the drawer, and passing the screws 29 through the plate and into the drawer. The remaining stop and drawer iron 30 is secured in like manner to the side of the drawer by fitting its disk in a bored cavity and passing screws through the disk and into the drawer; but as the stop-iron 30 resembles the stop-iron 20 I have not deemed it necessary to more particularly describe the same. This iron 30 is adapted to travel in the guide-groove 8 of the slide, and it is attached to the drawer below the iron 19 and a short distance in advance of the same, so that the stop-iron 30 will clear the open end 9 of the groove 8 when the iron 19 abuts against the angular stop in the outward horizontal movement of the drawer.

The outward movement of the slide with the drawer is arrested by a slide-stop 31. This end is attained in ordinary devices of this class by a dowel-pin made of wood and secured to the drawer; but experience has demonstrated that this wooden pin is easily broken and that in course of service it becomes battered to such an extent that it does not act satisfactorily. I overcome these objections by an improved construction of the stop, which is cast in a single piece of metal, is attached easily and securely to the slide, and works in a slot of the guide-rail 4 within the casing. This slide-stop is cast with a disk 32 and a cylindrical pin 33, and the slide-stop is attached to the slide by boring a hole 34 in the slide, fitting the disk 32 in the opening for the pin 33 to protrude beyond the outer face of the slide, and securing the stop securely in place by the screws 35. The pin 33 of the stop projects into and is free to play in a longitudinal slot 36, which is provided in the guide-rail 4 of the casing, and the pin is adapted to abut against the closed end of

the slot in said rail 4 to limit the outward movement of the slide.

As is usual in this art, the drawer is provided with a flap 37, which is adapted to be connected by a suitable hinge or hinges to the drawer, and this flap is limited in its outward movement by an improved construction and arrangement of stop-links. It is common to use stop-links; but heretofore they have been arranged to project beyond the flap in the act of folding the latter against the drawer, in consequence of which it has been necessary to adjust the stop-links separately after the flap itself has been closed, thus involving time and creating annoyance to the operator. I overcome these objections by providing recesses or slots 38 on the inner sides of the drawer and attaching the stop-links pivotally to the flap, so as to permit the free ends of said links to be contained within the recesses or slots of the drawer. The links have longitudinal slots 40, and the outer ends of said links are attached to the flap by means of brackets 41, which are secured to the flap by screws and are constructed with pintles 42, on which are fitted loosely the ends of the links. The slotted portions of the links are adapted to be housed within the slots or recesses of the drawer, as shown by Fig. 6, and through said slots of the links are passed the arresting pins or screws 43, which are firmly secured to the drawer to span the recesses or slots 38 therein.

In the service of the structure the slides are free to move endwise in the guideways formed by the rails 4 and 5, and these slides have bearings throughout their entire length in said rails. The outward movement of the slides is positively arrested by the stops 31 abutting against the rails 4. The drawer is arranged between the slides to have the irons 19 20 engage with the track-rails, while the irons 30 engage the grooves 8 in the two slides. In the horizontal movement of the drawer with the slides these irons 19, 20, and 30 hold the drawer in a perfectly-horizontal position and against any tendency to tilt between the slides until the latter have reached the limit of their outward movement, thus preventing the drawer from getting out of position during the operation of withdrawing it and the slides from the case 1. The drawer-irons 19 are arranged for the depending lips 23 to engage with the sides of the track-rails and to travel in the channels 14, thereby preventing the slides from spreading laterally during the adjustment of the drawer and overcoming any tendency of the drawer to drop from engagement with the slides. In pulling out the drawer the slides travel with it until arrested by the stops 31, after which the drawer may be drawn outward from the slides until the irons 30 pass through the ends 9 of the grooves to clear the slides, and the irons 19 abut against the angular stops 16. In this condition of the drawer the forward end thereof

is free to drop down and permit the drawer to assume the tilted or inclined position shown by Fig. 1, and the drawer is suspended by the irons 19 from the slides, because said irons remain in engagement with the track-rails. 5 The irons 20 are raised upward from the track-rails on the swinging movement of the drawer, while the irons 30 are brought by the drawer below the slides and swing toward the same, so as to abut the lower edges of the slides, thereby arresting the swinging movement of the drawer and causing it to remain in a tilted position convenient to the operator in inspecting the contents thereof. 10 The flap may be drawn outward or lifted, and the links adjust themselves with the flap both in opening and closing the same. To close the drawer, the flap is first folded against the drawer, and the latter is turned to a horizontal position for the irons 20 to rest upon the track-rails and the irons 30 to assume positions in line with the grooves 8 in the slides. 15 The drawer may now be shoved inward between the slides to cause the irons 30 to enter the grooves 8, and on the continued inward movement of the drawer the slides travel with it until the drawer and the slides are housed entirely within the case 1, as shown by Fig. 2 of the drawings.

It is evident that changes in the details of construction and in the form and proportions of parts may be made by the skilled constructor without departing from the invention.

Having thus fully described the invention, what I claim is—

1. The combination of the slides, a drawer, supporting-irons carried by said drawer and fitted to the slides to remain in engagement therewith and adapted to turn on the slides in the swinging movement of the drawer, other drawer-irons separate from the first-named irons and slidably engaging with the slides during the horizontal adjustment of the drawer, to maintain the latter in its horizontal position during such slidable adjustment; said last-named drawer-irons arranged to free themselves from the slides and, on the swinging adjustment of the drawer, adapted to impinge against the slides to limit the swinging adjustment of the drawer, substantially as and for the purposes described.

2. The drawer-slides having the longitudinal grooves or channels and suitable track-rails, combined with a drawer, drawer-irons arranged to travel on said track-rails and to remain in engagement therewith, and the stop-irons arranged in advance of the first-named drawer-irons to travel in the grooves or channels of the slides and to maintain the drawer in a horizontal position during its sliding adjustment, said stop-irons being also adapted to clear the slides and, on the swinging adjustment of the drawer, to abut against the slides, substantially as described.

3. The combination of a drawer, the slides having rabbeted upper edges and the longi-

tudinal guide-grooves below said edges, track-rails secured to the rabbeted edges of the slides, drawer-irons, 19, 20, attached to the drawer in the same horizontal plane and adapted to said track-rails, and the stop-irons attached to the drawer below the first-named irons, in advance of the same, to travel in the guide-grooves of the slides and adapted to clear the latter, so that on the swinging adjustment of the drawer, the stop-irons will abut against the slides, substantially as and for the purpose set forth.

4. In a portfolio-drawer, a slide having an offstanding vertical rib and a rabbeted edge, 6, parallel to said vertical rib and a transverse notch in the upper edge, at the front end, of the slide, combined with a straight abrupt-ended track-rail fitted to the rabbeted edge, 6, and lying parallel to the vertical rib, a stop fitted in the notched front end of the slide, and a fastening-bolt to secure the stop and slide firmly together, as set forth.

5. In a portfolio-drawer, the slide uniform in width throughout its length and provided with an offstanding vertical rib and in its inner face with a longitudinal rabbet, and with a notch at its front end, combined with a track-rail secured in the rabbeted portion of the slide and lying parallel to the offstanding vertical rib to leave an intermediate space for the accommodation of drawer-slides, and a stop independent of the track-rail and fastened to the notched front end of the slide in the horizontal plane of the track-rail, substantially as described.

6. In a portfolio-drawer, the combination with the guides, of a slide provided with a notched front end, the stop and track-rail made in separate pieces and fastened firmly to the slide independently one from the other, said slide being uniform in width throughout its length, and the rail and stop being arranged on said slide within the upper and lower edges thereof to provide continuous bearing edges for the slide in said guides, substantially as and for the purposes described.

7. In a portfolio-drawer, the combination of parallel guide-rails, 4, 5, arranged contiguous to each other and one of said rails having a longitudinal slot, 36, a slide uniform in width throughout its length and arranged in contact laterally with the slotted rail, 4, and to have edgewise contact with the other rail, 5, a track-rail secured laterally to the slide and parallel therewith to form a guideway, a drawer having slides or irons which clasp the track-rail and travel in the space between the slide and said rail, and a fixed stop on the slide to project therefrom and arranged to travel in the slot of one of the guide-rails, substantially as and for the purposes specified.

8. A furniture-drawer having slides of uniform width throughout their entire length and provided with flat metallic bars secured to

the inner side and upper edge thereof and
the bar having a recess in its upper edge near
the front end, and a longitudinal raceway in
the upper edge of the slide formed by a rab-
5 bet in said slide and the upper part of the
metallic bar, in combination with a drawer
having lugs engaging the upper edges of the
bars and extending into the races in the slides,
and bars having races with which the upper

part of the slides engage, substantially as 10
and for the purposes described.

In testimony whereof I have set my hand
in the presence of two attesting witnesses.

EDMUND W. WOODRUFF.

Witnesses:

THEO. A. HARDING,
J. W. BELT.