(No Model.).

L. A. WILLIAMS.

DRAWER GUIDE EQUALIZER.

No. 430,908. Patented June 24, 1890.

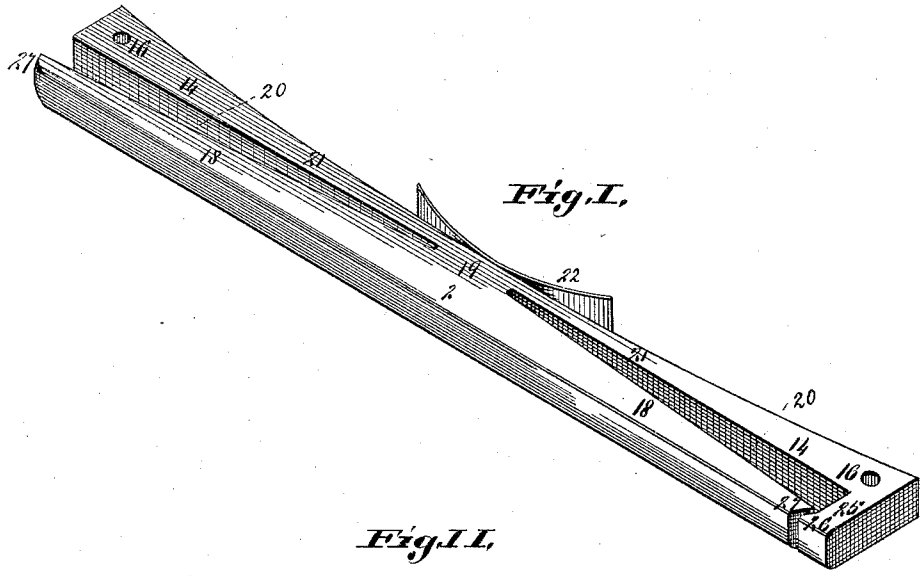


Fig. I.

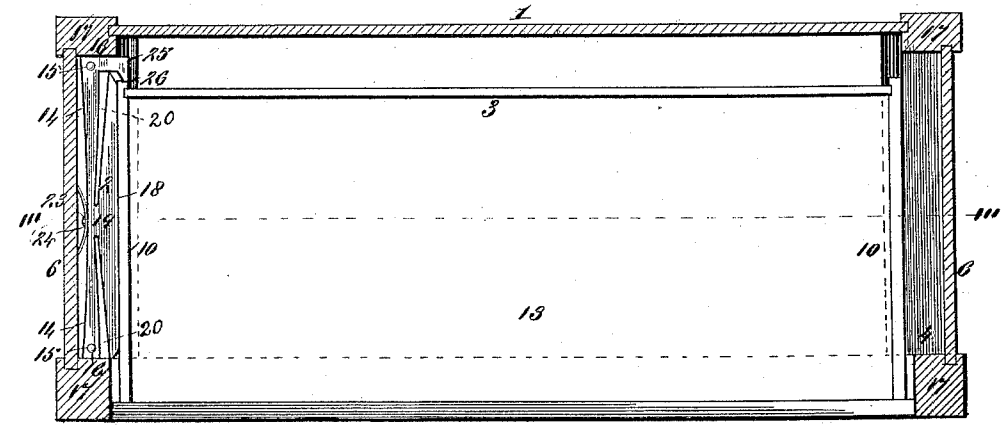


Fig. II.

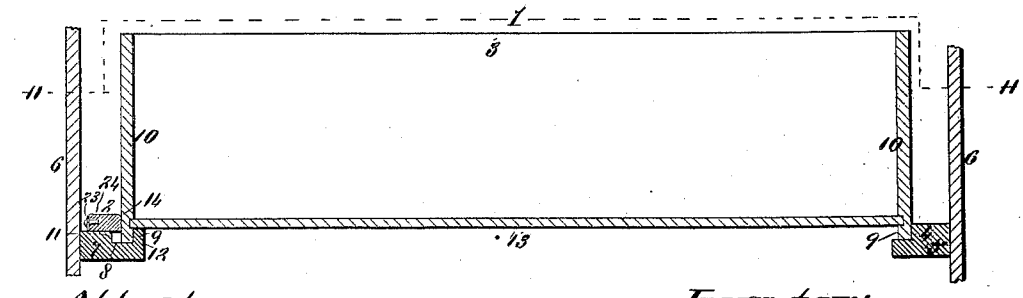


Fig. III.

Attest;
E. Arthur.
E. L. Knight

Inventor;
Leonard A. Williams.
By Knight Bro's.
atty's.

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UNITED STATES PATENT OFFICE.

LEONARD A. WILLIAMS, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO OTTO H. VORNBROCK, OF SAME PLACE.

DRAWER-GUIDE EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 430,908, dated June 24, 1890.

Application filed February 27, 1890. Serial No. 341,972. (No model.)

To all whom it may concern:

Be it known that I, LEONARD A. WILLIAMS, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Drawer-Guide Equalizers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a spring equalizing-guide located at one end of the drawer of a bureau that secures to said drawer a parallel movement to the stationary guide-piece at the reverse end of the drawer by reason of the elastic lateral rock-spring pressure of the spring against said drawer, which secures to the action of the drawer, respectively, in either opening or closing an elastic compensating movement that equalizes the action of the respective ends and prevents the cramping of the same; and the invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a perspective view of the wooden rock-spring and cushion with the central metal strap-spring secured thereto. Fig. II is a horizontal section taken on the stagger line II II, Fig. III, and shows the respective positions of the drawer with its guide-piece at one end and its combined wooden and strap steel equalizing-spring at the other end; and Fig. III is a vertical section taken on line III III, Fig. II, and shows the position of the drawer on its tracks, with the laterally self-adjusting track at the spring-action end thereof.

Referring to the drawings, 1 represents a detail of a bureau or chest of drawers in which my combined wooden rock and metal strap center-equalizing spring-frame 2 is attached and used.

3 are the drawers that run in said chest, and whose movements are equalized by said springs.

4 represents the stationary guide-piece at one end of the drawer, which is secured by glue or by any other suitable means to that one 5 of the two end bearer-bars that supports that end of the drawer (and on which it runs) and to the inside of the corresponding end piece 6 of the chest-frame, to which said end bar is also secured by screws or otherwise.

7 represents the opposite end bearer-bar of the chest-frame to that already described, which is secured by screws or otherwise to the corresponding end piece 6 at its end of the frame.

8 represents an elongated channel-groove in said bearer-bar 7, in which the extension-foot 9 runs, of that one of the end pieces 10 of the drawer against which the equalizing-spring works, the extension-foot, also 9, on the other end piece, also 10, of the drawer, resting and running at the same level on the bearer-bar 5, which carries the stationary guide-piece. The said channel-groove is sufficiently wide to give lateral freedom to the movement of the drawer, so as not to bind or to in any degree adversely limit the action of the equalizer combination-spring; but in case of rough handling of the drawer the out edge 11 of said channel-groove then provides a buffer lateral stay that prevents the undue straining of the springs, and the inner edge 12 may be sufficiently elevated to reach to the bottom 13 of said drawer and thus completely house in said extension-foot and form a buffer-stay to its lateral inward movement.

The end bearer-bar 7 not only supports one end of the drawer, but also carries the equalizer combination-spring frame 2, that maintains the uniform parallel position of the drawer in its movements.

The pivoted ends of the wooden spring-frame 14, that carries the combination-springs, are secured to said end bar 7 by pivot screws or bolts or dowel-pins 15, that are seated in the perforate bearings 16 at the pivotal ends of said frame, and whose points are engaged in said end bearer-bar. The said equalizer-frame extends from post to post 17 of the bureau-frame.

The spring-frame and the wooden contact-spring cushion 18 it carries are cut integral out of one piece of timber in the form shown in Fig. I, the pivotally-attachable rear parts flaring out toward their ends, thereby securing a better and stronger hold for said pivotal attachment, and tapering, respectively,

from each end toward their junction rock-center piece 19, that integrally connects the spring center of the frame to said wooden contact-spring cushion 18 that it carries, and for which it provides a center rock. This center rock, with other devices about to be described, provides a central self-adjusting rock-spring action, equally elastic and pliant at both the back and front of the drawer in contradistinction to equalizer-springs that work crosswise from the rear to the front of the drawer, or vice versa, and consequently do not, as with my device, centrally equalize the spring-pressure both fore and aft on the end of the drawer.

As is clearly shown in Fig. I, the rear of the spring-frame 14 is cut on the arc of a circle, and two tongues of timber are cut away between said rear spring-frame and said contact cushion-spring, leaving open slots 20, that flare toward their outer terminals and taper as they approach the junction rock-center piece 19 that connects said contact-spring to said spring-frame. It will also be seen that said flaring slot inclines forward toward its outer ends, so as to increase the pliability of the contact-spring toward its points as the leverage from the pressure decreases toward said points. On the other hand, the tapering points of said slots angle toward the rear as they approach the junction rock-center piece, so as to increase the pliant elastic action toward the center of the arc-frame spring 21, which elastically bends in response to the rock spring-cushion pressure of the contact-spring.

22 represents a short metal arc-strap spring, which is secured to the center of the concave face of the long wooden arc spring by the screw 23, that passes through the perforation 24 in the center of said arc-strap spring and is screw-seated in the junction rock-center 19 and in the back of the wooden contact-rock springs. The said metal arc-strap spring forms a re-enforce central spring backing to the other parts above described of the center rock-spring of my equalizing system.

25 represents a hooked terminal that extends laterally at a right angle forward from the inner terminal of the spring-frame bar 14, with which it is integral. The forward end of said hook is provided with a square-tipped point 26, that forms a buffer-stay to the further progress of the drawer in closing when it has reached its required destination. The saw in cutting out the slot 20 cuts at the hooked end of the spring-frame an oblique slot 27 inside the square-tipped point of said hook, so as to allow working latitude for the inner points of the contact-spring cushion 18. Now when the drawer is being inserted within the bureau the slight pressure against the equalizer-springs presses them back sufficiently, as shown in Fig. II, for the then laterally-projecting square-tipped end 26 of the hooked terminal 25 to serve as a buffer-stay to arrest the further progress of the drawer after it is shut home.

I have shown and described my preferred form of a metal arc-strap spring 22 as a re-enforce spring backing to the rear center of the equalizing-spring frame; but I do not confine myself to the form of said center re-enforce spring, for a coil or spiral metal spring may take the place of the metal arc-strap spring, or any other suitable center re-enforce spring may be used.

The back of the contact-spring cushion 18 is preferably cut of a convex form, while the front of said cushion has a straight contact-surface to register with the end of the drawer against which it works, except at its bevel-pointed ends 27.

I claim as my invention—

1. In a drawer-equalizer, the arc concave spring 21, the convex rocking spring-cushion 18, and the junction rock-center 19, substantially as and for the purpose set forth.

2. In a drawer-equalizer, the combination of the arc spring 21, the convex rocking spring-cushion 18, the junction rock-center 19, and the buffer stay-hook 25, all which parts are integral in one piece, substantially as and for the purpose set forth.

3. In a drawer-equalizer, the combination of the arc spring 21, the convex-backed rocking spring-cushion 18, the rock-center 19, that connects said cushion to said arc spring, the buffer stay-hook 25, all said parts being integral in one piece, and the center re-enforce back spring 22, substantially as and for the purpose set forth.

4. In a drawer-equalizer, the combination of the equalizer combination-spring and spring-pressure cushion and the junction rock-center 19 integral in one piece, the end bearer-bars on which the drawer works, the bar that supports the equalizer-springs being provided with the channel-groove 8, in which the extension-foot 9 of the end piece of the drawer that surmounts said bar runs, and the center back re-enforce spring 22, substantially as and for the purpose set forth.

5. In a drawer-equalizer, the combination of the bearer-bars of the frame of the bureau in which the drawers are deposited, the guide-piece secured on one of said bearer-bars, the equalizer combination-spring and spring-cushion, the junction rock-center 19, the buffer terminal hook 25, against which the drawer closes, the said spring-cushion, junction rock-center, and buffer-hook 25 being integral in one piece, and the center back re-enforce spring 22, substantially as and for the purpose set forth.

LEONARD A. WILLIAMS.

In presence of—
BENJN. A. KNIGHT,
SAML. KNIGHT.