

April 16, 1946.

E. P. HAMILTON

2,398,528

DRAWER STRUCTURE

Filed Aug. 12, 1940

Fig. 1

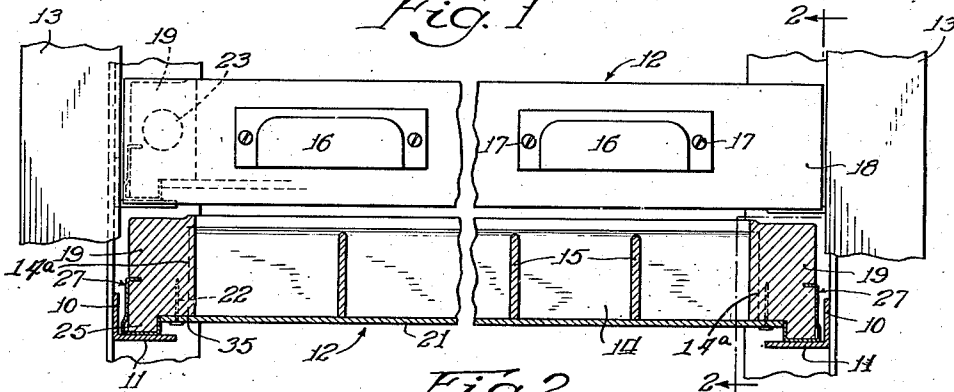


Fig. 2

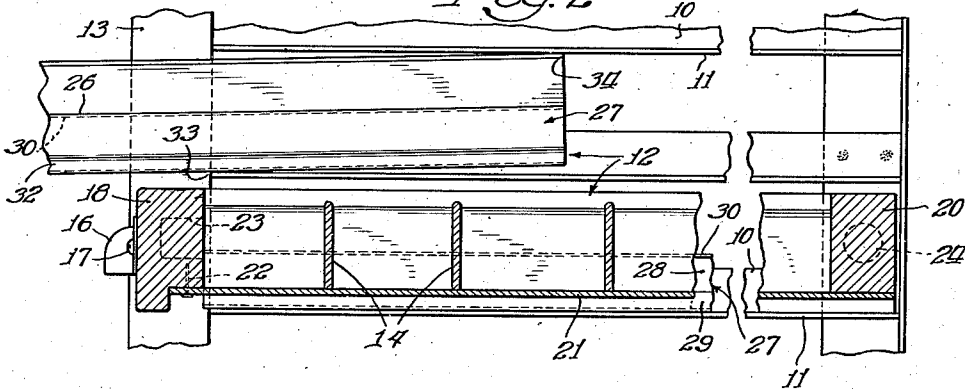
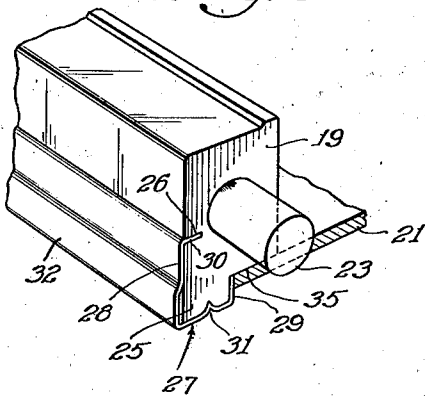


Fig. 3



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Att.

UNITED STATES PATENT OFFICE

2,398,528

DRAWER STRUCTURE

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Application August 12, 1940, Serial No. 352,209

11 Claims. (Cl. 45-7)

This invention relates to drawer structures and more particularly to drawers provided with metal shoes contacting with and supporting the drawer upon metal runways, upon which the drawer is moved in or out as may be required to provide access to the interior of the drawer or to close it after such access has been had. My invention finds particular utility in connection with drawers which are used as type cases and the present invention is an improvement upon my Patent No. 1,905,857 of April 25, 1933.

It will be recognized that type case drawers, in order to be relatively light and inexpensive, are made largely of materials such as wood and that the mounting of such drawers upon steel runways through the intermediation of steel shoes is desirable in order to permit the drawer to carry a relatively heavy load in proportion to its own weight, such as a large number of groups of lead type, while at the same time permitting the drawer to be moved inwardly and outwardly with a relatively light touch of the hand or without objectionable sticking. Because of the weight and frequency of use, the tendency to wear is excessive.

Constant efforts are being made by the trade both to reduce the cost of manufacture of such type case drawers and to enhance the efficiency thereof. The present invention aims, among other objects to provide a structure including the said shoes which may be assembled with a maximum of ease and speed and with a minimum of expense, so as to further the production of these drawers in large quantities at reduced factory cost and thus to widen the potential market for such devices, and make it possible for them to be purchased by printers having smaller incomes as well as by the larger printing shops. Furthermore, the present invention aims to increase the efficiency of a drawer of this class by making it possible for a single drawer to have a greater number of type receiving compartments and therefore to carry an increasing weight of lead type.

To accomplish these purposes, I have found that instead of attaching a hollow metal shoe to the drawer by nails or the like, I can form the drawer structure and its associated metal shoes in such a way both as to avoid the necessity for nails or other separable fasteners and at the same time to cause the material of the drawer to act as a filler for the shoe so that the latter is reinforced against compression and bending strains which frequently cause a hollow shoe to kink when the drawer is held part way out, say, of the cabinet. It will be understood that in such a position, the front part of the drawer is not supported directly

but is supported in cantilever fashion by the rear part of the drawer which is wedged between its own runway and the runway for the drawer next above it. In such event, the weight of the forward and not directly supported part of the drawer with its heavy load of lead type exerts a moment of inertia which applies a stress to the drawer shoes at the point where the steel runways terminate at the front of the cabinet. It has been found that by use of the present invention, kinking of the shoe at this point is advantageously prevented.

Other objects and advantages of the present construction will be apparent from the following more detailed description, taken together with the accompanying drawing, in which—

Figure 1 is a front elevational view of a portion of a cabinet and drawer structure with my invention applied thereto, one of the drawers and its supports being shown in section;

Figure 2 is a side view of the structure of Fig. 1, with one of the drawers pulled out part way, parts being broken away and parts being in section;

Figure 3 is a fragmentary perspective view of a unitary side rail and shoe shown in the other figures of the drawing, a fragment of the drawer bottom associated therewith broken away and in section.

Referring in detail to the figures of the drawing, I have shown steel brackets 10, the horizontal portions of which provide runways 11 for the drawers 12. The brackets 10 are appropriately fixed in parallel relation within a frame or cabinet 13 which may be located, for instance, below a printer's composing room cabinet.

The drawers 12 are conveniently divided into a plurality of rectangular compartments of varying sizes spaced as by longitudinal partitions 15 and transverse partitions 14, for the reception and separation of various type groups. Each drawer generally has one or more of the handles or pulls 16 of the under-finger-type for convenience, and these are attached as by screws 17 to the usual wood front strip 18 of the drawer which together with the wood side rails 19 and back strip 20 support the partitions 14 and 15 and the drawer bottom board 21, the latter being secured to the other parts as by nails 22. The wood side rail 19 is conveniently recessed at its inner face to receive the end of the partition or slat 14 with the lower corner of the latter resting on the bottom board 21, as clearly shown in the drawing (Fig. 1) without notching of the partition, as at 14a.

The front strip 18 laps the ends of the side rails 19, the latter abutting and being secured thereto as by tenons 23 which are received and secured as by gluing them in appropriate sockets in the front strips. A similar mortise and tenon securement may be employed between the rear strip 20 and side rails 19, the side rails in this case lapping the ends of the rear strip and receiving the tenons 24 on the latter, as is well known in the art.

In accordance with the present invention, each of the wood side rails 19 has extending longitudinally along its outer edge an integral depending portion or rib 25 which, as here shown, is desirably eccentric of a vertical center line of the side rail, and along its laterally facing outer side the side rail has a longitudinally extending groove 26.

The metallic shoe of the present invention for cooperation with this part of the side rail is in the form of a steel channel member 27, the channel of which substantially snugly receives the depending portion 25 of the side rail 19, desirably as by a telescopic end to end interengagement of the side rail and channel, from the rear end of the side rail.

In the present embodiment of the invention, the outer side of the channel member 27 is extended upwardly as at 28 beyond its inner side 29, and at the upper termination of the extension 28 the channel member is turned inwardly to provide a horizontal flange 30 snugly received in the side rail groove 26, the interengagement of the groove 26 and flange 30 serving in this instance to support the channel member and secure the rail depending portion in the channel. For further securement, the channel after being located in position as described, may be indented as at 31 into the wood of the side rail at its forward end, as by a suitable swaging tool or the like, to inhibit relative longitudinal movement of the channel member rearwardly of the rail, the drawer front strip 18 by abutment with both the front ends of the side rails and channels, as shown, serving to inhibit relative forward movement of these parts.

Along its outer lower corner the channel member 27 is desirably slightly offset laterally as at 32, in this instance, both from the side rail and from the upward extension 28 of the channel member, to form somewhat of a longitudinal bead.

So constructed and arranged, the drawer 12 is slidingly supported on the cabinet runways 11 through the intermediation of the channel members 27 which in turn are reinforced by the depending portions 25 of the side rails so that, for example, when a drawer is pulled out of the cabinet part way, say, as shown for the upper drawer in Fig. 2 of the drawing, kinking of the channel members is prevented at the points 33 upon which the drawer (of considerable weight if loaded with type) is then fulcrumed and which points 33 are the inevitably relatively sharp forward edges of the horizontal runways 11, upon which the drawer slides. The drawer at this time will rock somewhat on the runway ends 33 and will have its rear edge contacting as at 34 against the lower surfaces of the runways 11 of the drawer next above it. The bead or offset 32 along the lower outer corner of the channel member 27 provides a sliding contact reduced in area for a minimum of friction between the drawer and the vertical portions of the brackets 10 constituting the runways for the drawer.

The eccentric depending portion 25 of the side

rail 19 serves an additional purpose in that it provides an undercut 35 in which the margins of the drawer bottom board 21 are received so that the nails 22 may be driven vertically upward into the side rail while disposing the bottom board and its nail fasteners in a plane above the lowermost termination of the side rail depending portion, so that the drawer definitely rides on the channels 27 and side rail depending portions 25 and not on the bottom board. Moreover, since the bottom board thus advantageously snugly laterally abuts the inner wall 29 of the channel member, this arrangement further tends to secure the channel member in position, as shown. It will be apparent that the channel member can be placed on the side rail in only the correct position and that the channel member may be conveniently assembled initially with the individual separate side rail before these parts are put together with the other drawer parts, thus making the side rail and channel member a unitary structure in themselves, having mutually reinforcing interengagement, further facilitating rapidity and economy of manufacture and efficiency of structure and operation.

Having described my invention, I claim:

1. In a drawer structure having metallic shoes for slidingly supporting the drawer upon drawer runways, the drawer having non-metallic side rails abutting at their forward ends a front strip of the drawer, the front strip lapping the ends of the side rail, the combination including an elongated eccentric depending portion on each of the side rails, a metallic channel member at each side of the drawer substantially snugly receiving said depending portion of the side rail, the outer side of said channel member being extended upwardly beyond its inner side and being at its upper termination turned inwardly to provide a horizontal flange within the vertical projection of the channel member, and a groove in the side rail receiving said flange to support the channel member, the channel member and side rail being interengaged by an end to end telescopic movement, the channel member being bulged slightly outwardly along its outer lower corner to have its outer wall laterally offset both from the side rail and from the adjacent upward extension of said channel member and being indented into the wood of the side rail at its forward end to inhibit relative longitudinal movement of the channel member rearwardly of the rail, the drawer front strip inhibiting relative forward movement.

2. In a drawer structure having metallic shoes for slidingly supporting the drawer upon drawer runways, the combination including at each side of the drawer a non-metallic side rail having an eccentric depending portion, a metallic channel member at each side of the drawer substantially snugly receiving said depending portion of the side rail, the outer side of said channel member being extended upwardly beyond its inner side and being at its upper termination turned inwardly to provide a horizontal flange within the vertical projection of the channel member, and a groove in the side rail receiving said flange to support the channel member, the channel member being bulged slightly outwardly along its outer lower corner to be laterally offset at this point both from the side rail and from the adjacent upward extension of the channel member.

3. In a drawer structure having a metallic shoe for slidingly supporting the drawer upon a drawer runway, the combination including at the side of the drawer a non-metallic side rail having on its

lower edge an eccentric depending portion and an under-cut portion inwardly adjacent said eccentric portion, a metallic channel member substantially snugly receiving said depending portion of the side rail, the outer side of said channel member being extended upwardly beyond its inner side and being at its upper termination turned inwardly to provide a horizontal flange within the vertical projection of the channel member, a groove in the side rail receiving said flange, and a drawer bottom piece secured to the under-cut portion of said side rail adjacent the said eccentric depending portion and abutting the said channel member thereat, whereby to assist in retaining the channel member in position.

4. A runner shoe for drawer structures comprising an elongated member of generally channel formation having a bottom wall and side walls to receive and embrace a portion of the side piece of the drawer, one of said side walls of said shoe having at its upper portion a laterally disposed flange extending inwardly of the shoe to engage in a groove in the said side piece of the drawer.

5. A runner shoe for drawer structures according to claim 4 in which said side wall extends upwardly beyond the horizontal plane including the uppermost part of the other of said side walls.

6. In a drawer structure for type cases, a drawer side piece, a runner shoe for said drawer comprising an elongated member of generally channel formation having a bottom wall and side walls, said channel shaped runner shoe receiving and embracing a portion of said drawer side piece, one of said side walls of said shoe having at its upper portion a laterally disposed flange extending inwardly of the shoe, said drawer side piece having a groove in its outer side and said laterally disposed flange extending into said groove.

7. In a drawer structure for type cases, a drawer bottom member, a drawer side piece, a runner shoe for said drawer comprising an elongated member of generally channel formation having a bottom wall and side walls, said channel shaped runner shoe receiving and embracing a portion of said drawer side piece, one of said side walls of said shoe having at its upper portion a later-

ally disposed flange extending inwardly of said shoe, said drawer side piece having a groove in its outer side and said laterally disposed flange extending into said groove, the overall width of said shoe being less than the width of said side piece, and said drawer bottom member and drawer side piece having an area of direct contact with each other permitting application of slats of the type case into the side piece without notching of said slats to avoid the shoe.

8. In a drawer structure for type cases, a drawer bottom member, a drawer side piece, the lower edge of which is cut away along its inner side providing a rib portion along its outer side, said side piece resting upon said bottom member by engagement of the cut away lower edge surface with said bottom member, a runner shoe for said drawer comprising an elongated member of generally channel formation having a bottom wall and side walls, said channel shaped runner shoe receiving and embracing said rib portion of the side piece, the overall width of said shoe being less than the width of said side piece.

9. In a drawer structure for type cases according to claim 8, one of the side walls of said shoe having a laterally disposed flange, said side piece having a recess therein receiving said lateral flange.

10. In a drawer structure having runner shoes for slidingly supporting the drawer upon drawer runways, the combination including at each side of the drawer a substantially solid side rail having an eccentric depending portion on its lower edge, a channel member at each side of the drawer substantially snugly receiving said depending portion of the side rail, said depending portion providing a reinforcing filler for said channel member, and means including an inwardly directed horizontal flange on said channel member within the vertical projection of the side rail for securing the depending portion of the side rail in the channel.

11. A runner shoe for drawer structures according to claim 4 in which said bottom wall of the shoe presents a substantially flattened bottom surface.

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