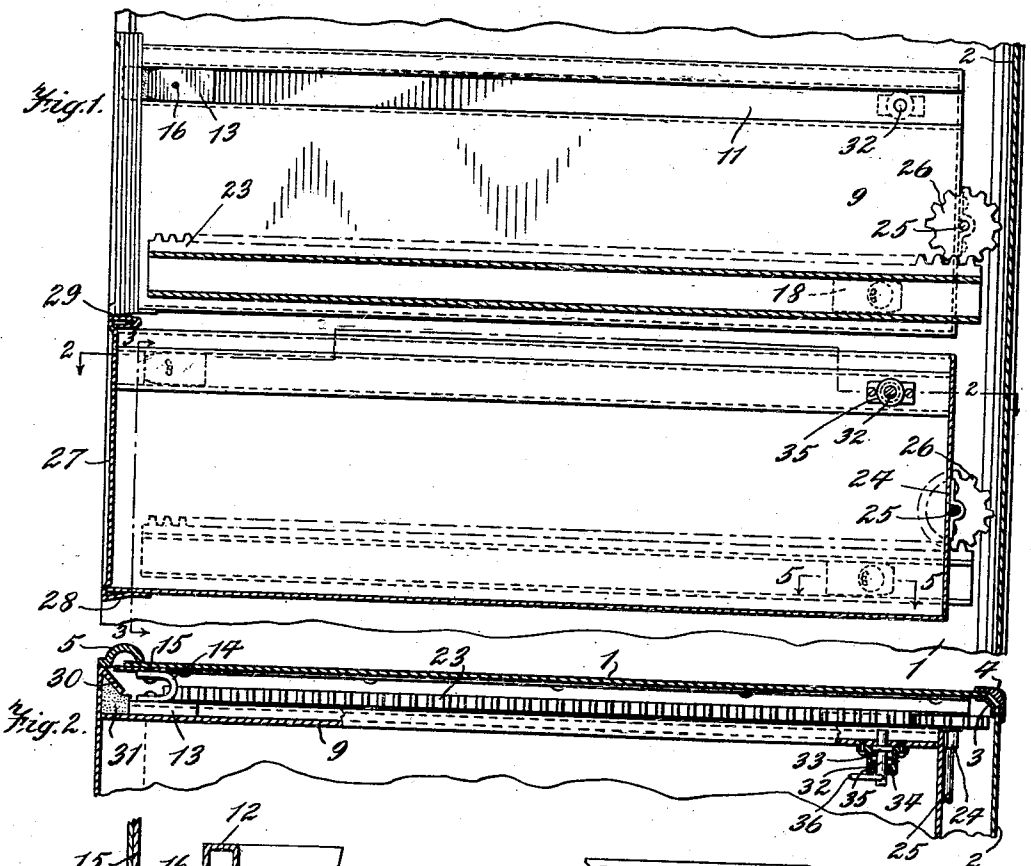
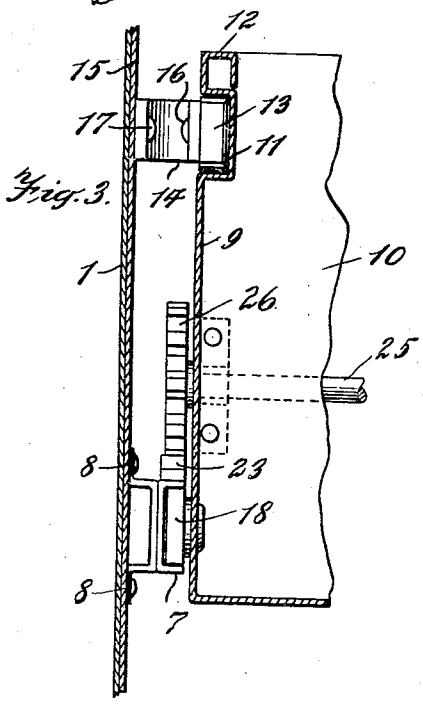
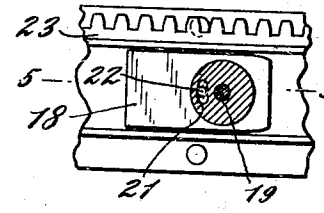
May 19, 1931. L. H. MORIN 1,806,174

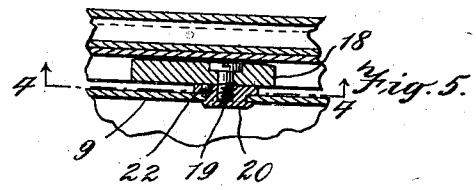
DRAWER AND SUPPORTING MEANS

Filed March 21, 1928









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Patented May 19, 1931 1,806,174

UNITED STATES PATENT OFFICE

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DRAWER AND SUPPORTING MEANS

Application filed March 21, 1928. Serial No. 263,407.

My invention relates to drawers and has for its object the provision of improvements both in the drawer and in the means for supporting and guiding the same, of such character that even though the drawer be heavily loaded it will move easily and without any possibility of wedging or jamming by reason of lateral oscillation or movement of one end of the drawer with respect to the other. The supporting and guiding means is so applied as to also restrain the drawer against tilting in a vertical plane.

My invention has for its further object the shaping and arranging of the various parts with respect to each other in such manner as to facilitate the use of metal as the basis of construction, thereby securing the advantages inherent in the use of metal furniture. Although I prefer to use metal in the construction of my improved device, my invention is not limited thereto and may if desired be applied to furniture constructed of wood or other non-metallic material.

My invention further includes details of construction by which unnecessary or complicated parts are avoided. By simplifying the construction in accordance with my invention, production and assembly are obtained at low cost and without in any way detracting from the rigidity and serviceability of the completed article.

Reference is hereby made to the accompanying drawings of which:

Fig. 1 is a vertical section of an article of furniture containing two drawers, the upper drawer being shown in side elevation and the lower in longitudinal section;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a section on line 3—3 of Fig. 1;

Fig. 4 is a detail section on line 4—4 of Fig. 5, and

Fig. 5 is a section on line 5—5 of Fig. 4.

The structure shown, which may be any article in which one or more drawers are used, comprises a side wall 1, and a rear wall 2 united thereto by means of angular corner strips 3 and 4. There is also a reinforcing strip 5 secured to the forward edge of the wall 1.

The means for supporting and guiding the drawer comprise a horizontal member composed of two channels 6 and 7 which are placed back to back with their webs in contact, and secured together in any suitable manner, as for example, by riveting or spot-welding. Each of these channels has upper and lower flanges and these flanges in the member 6 have extensions 8, which occupy a vertical plane and are secured to the side wall 1 in any suitable manner, as for example, by rivets, as shown. The member 7 is formed with an integral rack 23, the purpose of which will appear later.

The side wall 9 of the drawer 10 which is preferably formed of sheet metal, although if desired, other materials may be used, is provided near the upper edge thereof with a horizontal channel or groove 11, above which the metal is bent as shown, to form a reinforcement 12 along the upper edge of the drawer. Means are provided for supporting the drawer at points adjacent its upper and lower edges in such a manner as to permit the drawer to move freely back and forth in a longitudinal direction, said means serving to restrain the drawer from tipping or tilting on a horizontal axis extending either transversely or longitudinally with respect to the drawer. These means comprise the channel 7 and groove 11 which have been described and also the parts which cooperate therewith as follows: Within the groove 11 is a shoe 13 which is pivotally supported by a U-shaped member 14. The latter is fixed to the side wall 1 by means of a rivet 17, a stiffening plate 15 being inserted between the wall 1 and member 14. A rivet 16 secures the shoe 13 to the member 14, said rivet being loosely applied to permit pivotal movement of said shoe 13 with respect to the supporting member 14. The shoe 13 is rectangular in form with its forward corners rounded as shown in Fig. 1 to facilitate its engagement with said groove 11.

The lower support comprises a shoe 18 which is secured to the side wall 9 of the drawer by means of a headed bolt or screw 19 which passes through said shoe, the end thereof engaging a threaded opening in a bushing 20 which is secured in a suitable

opening in said side-wall, as for example, by upsetting one end of said bushing. There is a curved slot 21 in the bushing, and a pin 22, rigid with the shoe 18, engages said slot. The shoe 18 has therefore a limited pivotal movement with respect to its supporting bolt 19. The shoe 18 is of rectangular form with its rear corners rounded as shown in Fig. 4 to facilitate its engagement with the groove of the channel 7.

The rear wall of the drawer 10 is provided with bearings 24 within which is journalled a horizontal shaft 25. Upon the extremities of said shaft are secured gears or pinions 26 which engage the racks 23 on either side of said drawer. By reason of such engagement, any lateral oscillation of the drawer is absolutely prevented, and therefore, there can be no wedging or jamming of the drawer with respect to its supports. The front wall 27 of the drawer is bent rearwardly forming a bottom reinforcement 28 secured in any suitable way to the bottom of the drawer and a top reinforcement 29. The side edges of the wall 27 are bent in a rearward and inward direction forming flanges 30 (see Fig. 2) and within the pockets formed between the flanges 30 and side walls 9 of the drawer are cushions 31, preferably of soft rubber, which are adapted to abut against the shoe 13 and act as yielding or elastic stops for the inward movement of the drawer.

The outward movement of the drawer is limited by the action of a latch 32 with respect to the member 13. This latch may be of any desired construction, but I prefer to use a spring pressed bolt 32 as shown, the same having an integral collar 33 for limiting outward movement of the bolt and a spiral spring 34 for permitting inward movement of the bolt sufficiently to enable it to clear the shoe 13 and permit the removal of the drawer from its supports. A casing 35 surrounds the bolt 32 and spring 34 and forms an abutment for the inner end of the latter. This casing is preferably riveted to the member 9 as shown. The inner end of the bolt 32 is provided with a handle 36 by which it may be conveniently manipulated to permit the removal of the drawer.

It will be noted that by the construction shown, the drawer can be readily moved in forward and rearward directions, since there is very little friction between the shoes 13 and grooves 11, and the shoes 18 and channels 7, all of these parts being preferably of metal. At the same time, the arrangement of such supporting shoes at the forward upper corner and rearward lower corner of said drawer is very effective for preventing tilting of the drawer about a transverse horizontal axis and also about a longitudinal horizontal axis and the provision of the horizontal shaft 25 with pinions at each end engaging the horizontal racks 23 prevents any possibility of oscillation of said drawer about a vertical axis. The result is a very free movement of the drawer at all times, whether empty or heavily loaded.

Having now described my invention, what I claim is:

1. In combination, a drawer having a horizontal groove, drawer supporting means comprising a horizontally grooved member, said grooves being on opposite sides of a horizontal plane passing through the center of the drawer, and pivotal shoes in said grooves for transmitting the weight of the drawer to the supporting means.

2. In combination, a drawer having a horizontal groove and a pivotal shoe disposed on opposite sides of a horizontal plane passing through its center, and drawer supporting means comprising a pivotal shoe engaging said groove and a horizontally grooved member engaging said first mentioned pivotal shoe.

3. In combination, a drawer and supporting means therefor, comprising a fixed member having a groove, a shoe secured to the rear portion of said drawer and slidable in said groove, a fixed shoe adjacent the front portion of the drawer when closed, and a groove in the drawer engaging said fixed shoe.

4. In combination, a drawer guide channel, a rack carried thereby, and a drawer having a rotatable pinion engaging said rack and a shoe engaging said channel.

5. In combination, a drawer, a drawer support having a horizontal groove, and a pivotal shoe carried by the drawer and having parallel upper and lower surfaces adjacent the upper and lower surfaces of said groove, the rear corners of said shoe being rounded.

6. In combination, a drawer having a horizontal groove, a drawer support comprising a pivotal shoe having parallel upper and lower surfaces adjacent the upper and lower surfaces of said groove, the forward corners of said shoe being rounded.

7. A drawer having an aperture in a side wall thereof, a bushing fixed therein, a screw threaded in said bushing, a shoe pivoted on said screw, and a pin and slot connection between said bushing and shoe.

8. A drawer guide consisting of a pair of channels opening oppositely and with webs secured together, one of said channels having marginal securing means extending vertically from its side walls, and a rack rigid with one flange of the other of said channels.

9. A drawer comprising a side wall, a front wall of sheet metal, the lateral margin of which extends beyond said sidewall and is bent rearwardly and inwardly, and a cushion within the pocket formed by said side wall and said front wall.

10. A drawer having a horizontal groove, a drawer support comprising a shoe engag-

ing said groove and a latch carried by the drawer, said latch having a stop member so situated as to engage said shoe to limit outward movement of said drawer, and movable inward with respect to the drawer to avoid contact with said shoe.

11. In combination, a drawer guide consisting of a pair of channels opening oppositely and with webs secured together, one of said channels having marginal securing means extending vertically from its side walls, and a drawer having a shoe engaging the other of said channels.

In witness whereof, I hereunto subscribe my signature.

LOUIS H. MORIN.