March 21, 1933. G. H. ZIEHL 1,902,748

DRAWER GUIDE

Filed Oct. 30, 1931 2 Sheets-Sheet 1

Fig. 1

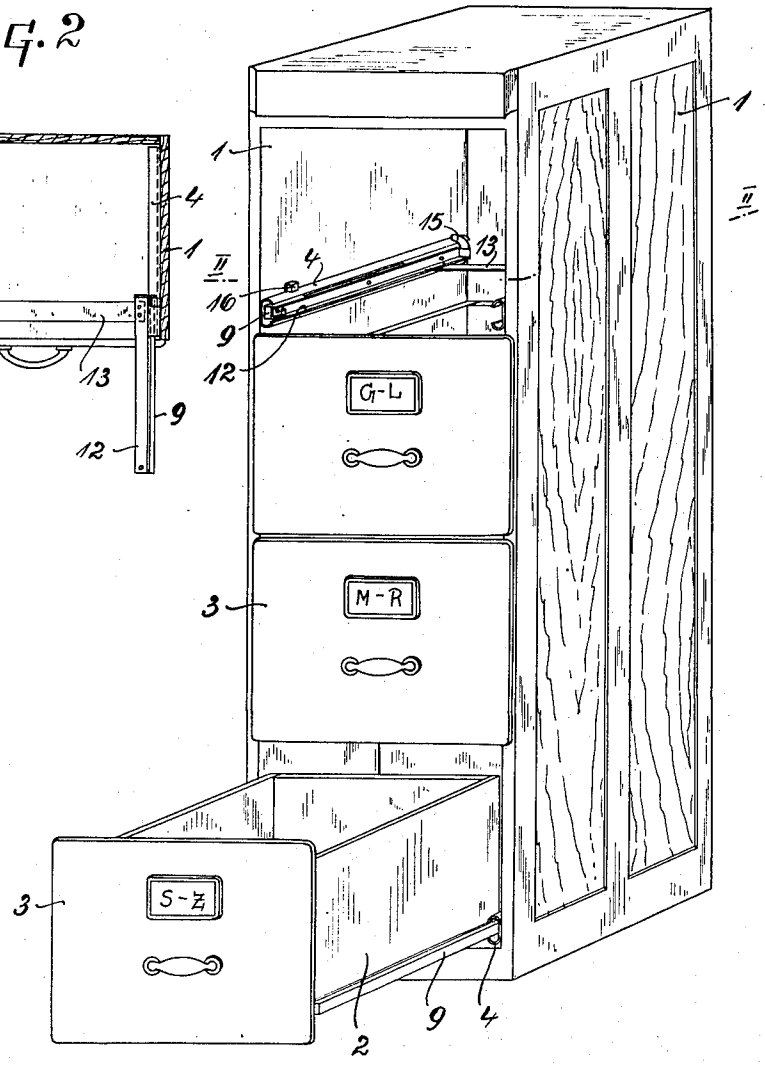


Fig. 2

Inventor:
Gustav Hermann Ziehl
by
Thomas Ackermann,
Attorney

March 21, 1933. G. H. ZIEHL 1,902,748

DRAWER GUIDE

Filed Oct. 30, 1931 2 Sheets-Sheet 2

Fig. 4

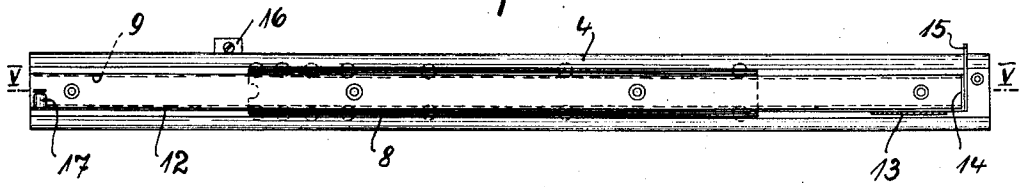


Fig. 3

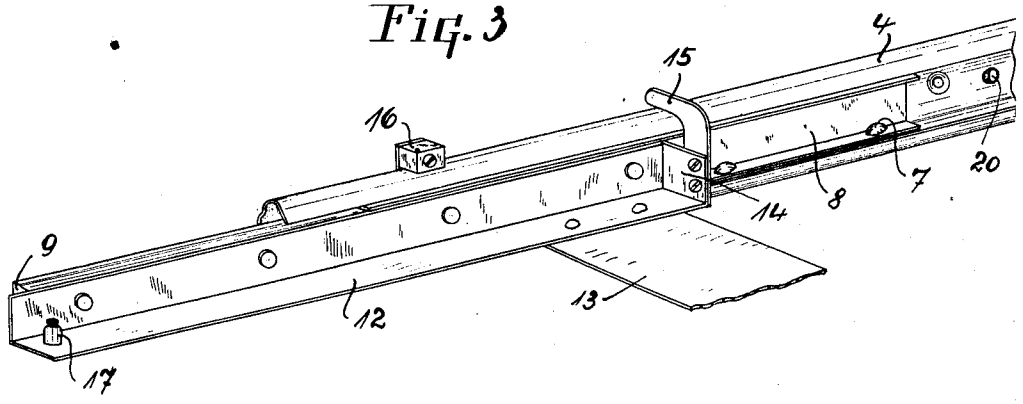


Fig. 5

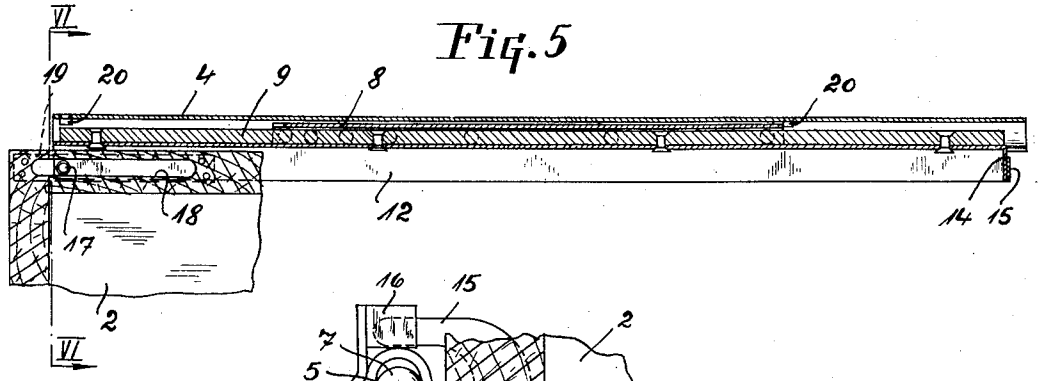
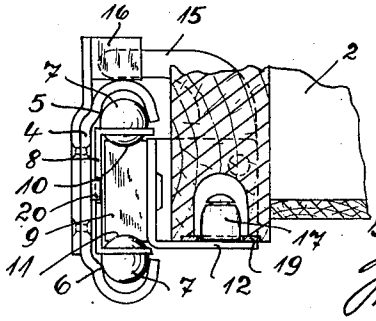


Fig. 6



Inventor:
Gustav Hermann Ziehl
by
Attorney

Patented Mar. 21, 1933 1,902,748

UNITED STATES PATENT OFFICE

GUSTAV HERMANN ZIEHL, OF RODENKIRCHEN, GERMANY

DRAWER GUIDE

Application filed October 30, 1931, Serial No. 572,137, and in Germany November 8, 1930.

The invention relates to drawer guides for card index drawers and other receptacles of more or less heavy contents, wherein the drawer is borne by two pairs of rails longitudinally associated with each other by means of runner balls. In such drawer guides known heretofore, one portion of each of the two pairs of runner rails is firmly arranged at the inside of the two vertical walls of the cabinet accommodating the drawers, whilst the drawer is detachably mounted on the longitudinally sliding portions of the runner rails.

In such arrangements known heretofore, protrusions, for example in the form of wooden strips have been attached to the sides of the drawers. If these sides consist, as is usually preferred, of wood, their permanent durable attachment necessitates a considerable wall thickness and therefore an increase of weight which is a great disadvantage in the case of drawers of heavy contents, e. g. in card indexing cabinets.

The essential novelty of the drawer guide forming the object of the invention is that inwardly and horizontally protruding supporting strips are arranged on the movable runner rails, the bottom edges of the drawer sides resting on these strips. Thus detrimental tensile stresses in the direction transverse to the grain of the wood are avoided.

Moreover from the rigid connection of the moving parts of the pair of ball rails with the supporting strips attached thereto, there is brought about a considerable increase of the resistance of these rails to bending and twisting in the drawn out condition in which they are sometimes subjected to very heavy stresses especially when heavy drawers are carelessly rested on one side.

The invention will be better understood by referring to the accompanying drawings in which:

Fig. 1 illustrates a card filing cabinet which is provided with the drawer guides according to the invention.

Fig. 2 shows a horizontal section on line II—II of Fig. 1.

Fig. 3 shows to a larger scale a perspective view of the drawer guide extended.

Fig. 4 shows the same parts in elevation seen from the inside and in the pushed-in position.

Fig. 5 shows a plan corresponding to Fig. 4 with a partial vertical section through the respective drawer.

Fig. 6 shows an enlarged section on line VI—VI of Fig. 5.

The side panels 1 of the cabinet serve to accommodate several drawers 2 arranged over each other, the front opening being preferably covered by the front walls 3, of the drawer fitting over the edges of the side panels when the drawers are closed. The two outer rails 4 are secured to these side panels level with and opposite each other, by means of wood screws, the top and bottom edges being bent over to form longitudinally extending channels 5 and 6 for two rows of balls 7, which are held together by a guide cage 8 between these channels and a runner strip 9 situated between so that they engage in the runner channels 10 and 11, arranged at the top and bottom edges respectively of this strip. At the inside of each of the runner strips 9 an angular protruding bearing rail 12, is arranged and both bearing rails are preferably connected by one or more cross members 13 so that they may move in and out together on their runner balls.

The inner spacing of the runner strips 9 corresponds to the width of the drawers so that the latter may rest with the bottom edge of their sides on the bearing rails 12 and may slide along with them. In order to fix the proper position of the drawer on these bearing rails there is arranged on each end of the latter an angular projection 14 against which the drawer strikes in the closed position. Attached to each projection is a striking arm 15, which fits over the outside of the top runner channel 5. A buffer stop 16 is attached to the latter at a suitable place further forward, so that it determines the front limiting position up to which the guide arm formed by the bearing rails 12 and the runner strips 9 may be drawn out without overloading the ball guide.

Near the front end of the bearing rail an upwardly protruding stop pin 17 is arranged, this fitting in a longitudinal slot 18 of each of the metal plates 19 for fixing to the bottom of the drawer and also in a corresponding longitudinal cavity arranged thereabove in the wood of the drawer. This arrangement is in order that, when the front roller guide limit of the drawer is reached—in which position the back end of the drawer still protrudes to a certain extent into the cabinet—the drawer may be drawn out still further, if it is to be taken off the bearing rails 12 and shifted or otherwise handled.

As will be seen, the guide cage 8 of the balls also travels with the to and fro movements of the bearing rails 12 and therefore the drawer supported by it also travels in a proportion diminished by the rolling motion of the balls between the faces touched by them on both sides. In the withdrawn position there is a corresponding reduction of the leverage of the load of the drawer against which the two runner rails 5 and 6 of the hollow rail 4 must be able to support the drawer in cantilever. As will be seen from the drawings, the guide cage consists of two parallel longitudinal strips connected together by an outer bridge piece. The balls 7 are mounted in holes in these strips. In order to fix the proper limit of movement of the ball cage, stop pins 20 are arranged at the inner wall of the flat portion of the hollow rail at suitable places in the sphere of movement of the vertical bridge portion, before and behind its two ends.

I claim:

1. In a device of the kind described, a cabinet having side walls and an open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, and a drawer resting on said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs.

2. In a device of the kind described, a cabinet having side walls and an open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, a drawer resting on the said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs, and cooperating stop means carried by the drawer and horizontal legs to limit movement of the drawer along said legs.

3. In a device of the kind described, a cabinet having side walls and an open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, a drawer resting on the said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs, said drawer having side walls provided with slots in the portions resting on said horizontal legs, and pins fixed to said horizontal legs and extending into the slots to limit movement of the drawer on said legs.

4. In a device of the kind described, a cabinet having side walls and an open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, a drawer resting on the said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs, said drawer having side walls resting on the said horizontal legs and provided in their bottom edges with longitudinal grooves confronting the said legs, cover plates covering said grooves and provided with longitudinally extending slots affording openings to said grooves, and pins fixed on said horizontal legs and extending through said slots into said grooves.

5. In a device of the kind described, a cabinet having side walls and an open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, ball bearings interposed between the sliding rails and channel rails, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said

sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, a drawer resting on the said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs, and cooperating stop means carried by the drawer and horizontal legs to limit movement of the drawer along said legs.

6. In a device of the kind described, a cabinet having side walls and on open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, ball bearings interposed between the sliding rails and channel rails, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, a drawer resting on the said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs, said drawer having side walls provided with slots in the portions resting on said horizontal legs, and pins fixed to said horizontal legs and extending into the slots to limit movement of the drawer on said legs.

7. In a device of the kind described, a cabinet having side walls and an open front, main channel rails fixed to said side walls in confronting relation, sliding rails supported in said main rails to move in and out of the cabinet, ball bearings interposed between the sliding rails and channel rails, means to limit outward movement of the sliding rails arranged to retain the rear ends of the sliding rails in the channel rails in the extreme outward position of said sliding rails, said sliding rails including angle members having horizontal legs projecting toward the center of the cabinet from the sliding rails, a drawer resting on the said horizontal legs and vertically liftable therefrom, said drawer being slidable on said horizontal legs, said drawer having side walls resting on the said horizontal legs and provided in their bottom edges with longitudinal grooves confronting the said legs, cover plates covering said grooves and provided with longitudinally extending slots affording openings to said grooves, and pins fixed on said horizontal legs and extending through said slots into said grooves.

In testimony whereof I affix my signature.

GUSTAV HERMANN ZIEHL.