Aug. 21, 1956 E. H. A. PARENT 2,759,480

FILING DRAWER WITH CARDS CLAMPING DEVICE

Original Filed Feb. 10, 1951 2 Sheets-Sheet 1

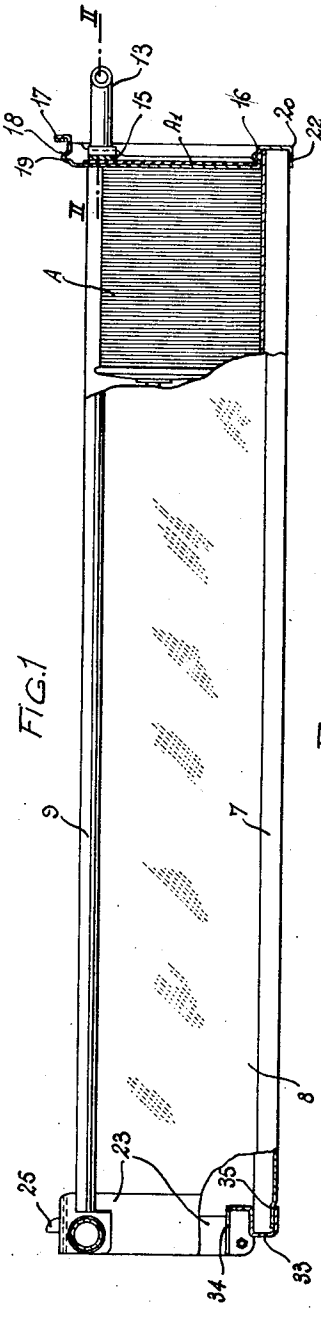


FIG. 1

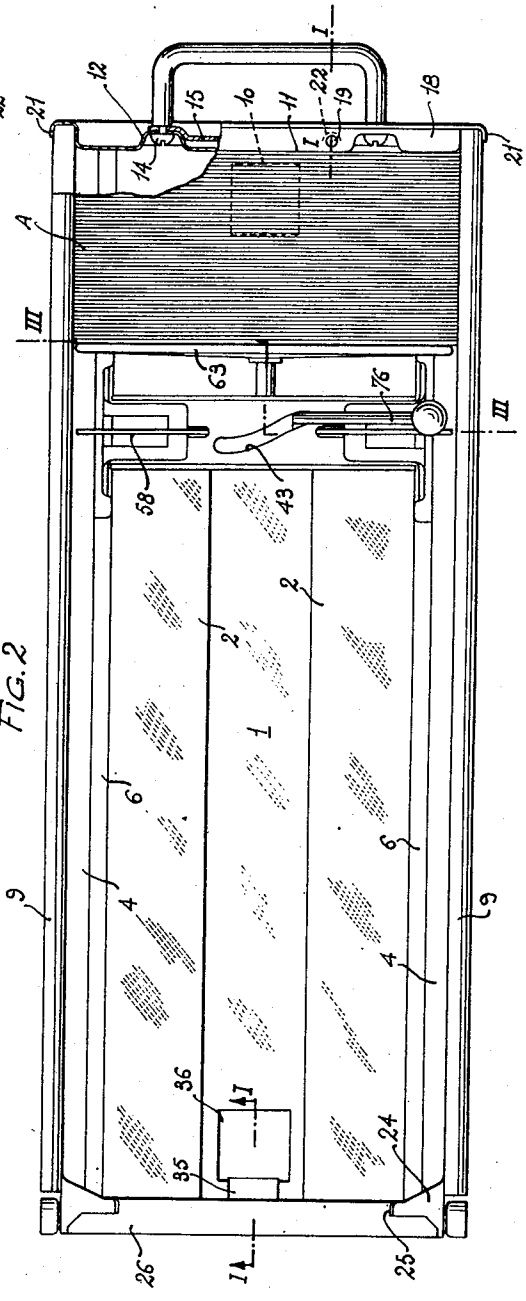


FIG. 2

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FIG.3

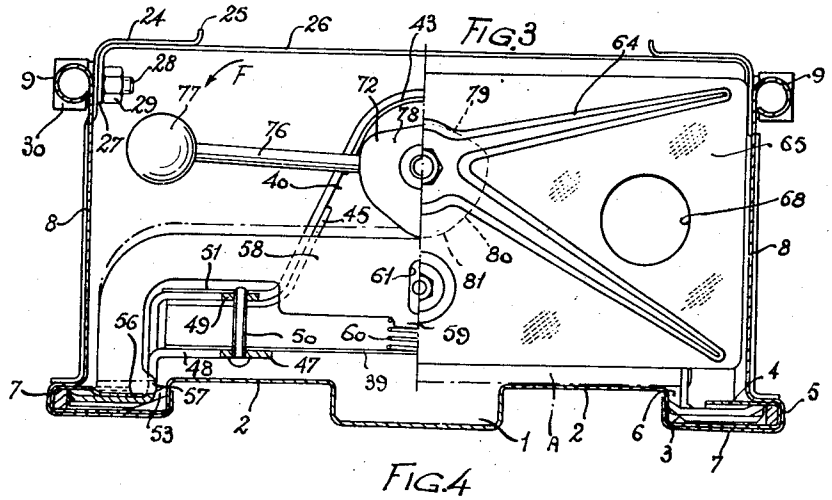


FIG.4

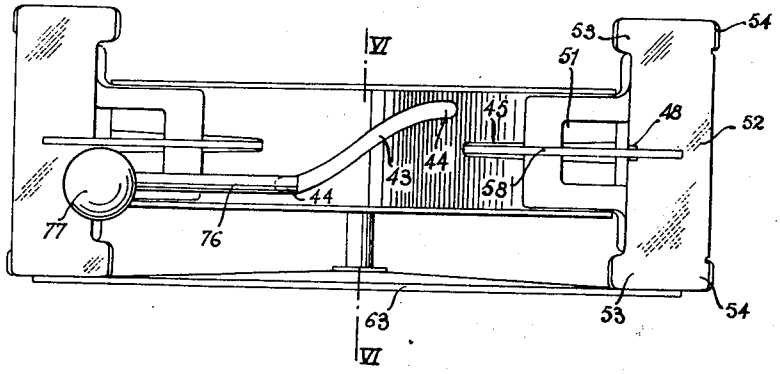


FIG.5

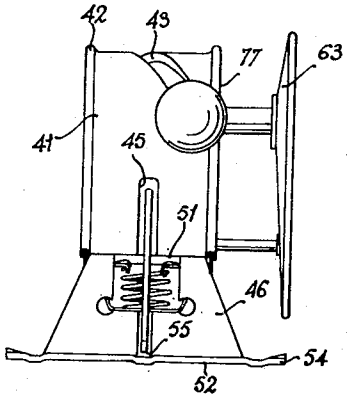
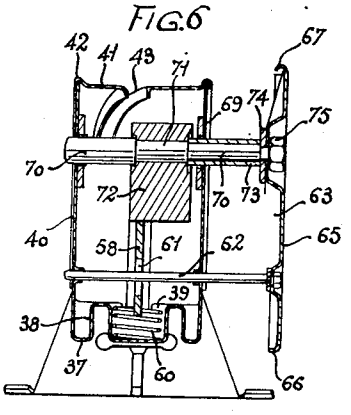


FIG.6



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United States Patent Office 2,759,480 Patented Aug. 21, 1956

2,759,480

FILING DRAWER WITH CARDS CLAMPING DEVICE

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Original application February 10, 1951, Serial No. 210,311, now Patent No. 2,701,747, dated February 8, 1955. Divided and this application December 22, 1954, Serial No. 477,041

1 Claim. (Cl. 129—29)

The present invention relates broadly to filing drawers and cabinets and more particularly to a filing drawer in combination with a cards-clamping device.

In my application Serial No. 210,311, filed February 10, 1951 (now U. S. Patent No. 2,701,747) for Filing Drawers and Cabinets I described a filing cabinet including a plurality of superjacent drawers, in which each drawer has opposite laterally extending ribs along its longitudinal bottom edges to cooperate with two opposite supporting rollers mounted on the inner side of the cabinet side walls adjacent the open side of said cabinet, and a pair of rollers mounted exteriorly of the side walls of said drawer adjacent the upper rear corner portions thereof in drawer suspending engagement with lateral horizontal rails secured to the inner side of said side walls of the cabinet.

In each drawer of my filing cabinet cards are placed in a row depthwise, and are blocked by a clamping device against a forward wall, so that it is possible, after having first pulled out the drawer and released the clamping device, to take out any desired set or pack of cards or, with the device still clamping the cards, completely extract the drawer from the cabinet and carry it without disturbing its contents, as described in the application from which the present application is divided.

The features of my drawer with cards clamping device will be more apparent from the ensuing disclosure, made in reference with the accompanying drawings, wherein:

Figure 1 is a side view of a drawer with the lower rear and the front portions broken away, on the line I—I of Figure 2.

Figure 2 is a corresponding plan view of the drawer with a part broken away in the horizontal plane of line II—II of Figure 1.

Figure 3 is a transverse cross-section of a whole drawer and part of its cards-clamping device, on the broken line III—III of Figure 2.

Figure 4 is a plan view of the clamping device separately.

Figure 5 is a corresponding side view.

Figure 6 is a transverse section of the same device, on line VI—VI of Figure 4.

Each drawer (see Figs. 1, 2 and 3) has its bottom and side walls defined by thin-gauge metal sheet elements suitably formed and electrically welded to one another. The bottom sheet element or plate is folded angularly along its width dimension, so as to provide in its upper face a channel **1** between two flat-topped ribs **2**, adapted to serve as supporting surfaces for the cards, and defining along each side a side runway channel **3**. The channels **3** are each partially overlapped by the marginal flange **4** of the sheet, which is horizontally inturned towards the centre of the drawer about a longitudinally extending stiffener iron **5** at a level slightly below that of the supporting faces **2**, and defining a longitudinal slideway **6**. Each slideway **3** is reinforced to retain its rectangular shape by welding thereover a surrounding margin **7** of the related side wall of the drawer, formed by a flat and straight edged vertical sheet **8**, having at its top an outwardly rolled bead **9**.

The sides **8** of the drawer, which transversely confine the cards A with a clearance of a few millimeters, are therefore perfectly smooth and with suitably rounded edges. The cards can thus easily be inserted into, and are entirely contained in, the drawer, and their sides run no danger of being fouled, as occurs in most known filing drawers; their lower corners are clear of the drawer for, when they rest upon the smooth top surfaces of the bottom ribs **2**, their lower sides are lightly above the slideway flanges **4**. The central channel **1** makes it possible to insert two fingers of a hand under any card that may have fallen down flat on the bottom of the drawer to lift it back into place. At the front, a square aperture **10** in the bottom sheet formed within this channel makes it possible to insert a pair of fingers from below to raise up a set of cards near to the front wall of the drawer. This front wall of the drawer consists of a sheet element press-formed in a succession of steps. The deepest press-forming step provides, on the internal side, the front card-supporting surface **11** cut across by the recess formed by two vertically-extending outer grooves **12**, whereby the ultimate card engaging the front wall may be disengaged and grasped.

At the top of the front wall, the handle **13** of the drawer is secured by screws having their heads **14** inside the drawer and contained in the recess of the grooves or ribs **12**, to a cambered strip **15** defining adjacent to the bottom of the outer face a small space into which a label may be inserted. Both vertical ribs merge with a framing reserved during press-forming operations, and the lower side of which, serving as a support for the label, carries a pair of studs **16** retaining said label. The dimensions are such that a label A1 provided by a used card folded double may be used.

The front wall sheet is folded back at its top to form a reinforced transverse flange **17** in front of a supporting surface **18**, designed for an overlying drawer and provided by the upper face of the press-formed recess. This surface lies at a sufficiently high level above the cards to enable the insertion of projecting riders or inserts. A pair of pins **19** are stamped out from this surface to serve as centering means for an overlying drawer; their spacing corresponds to that of the ribs **2** in the bottom of the drawer. On its remaining sides, the front wall sheet is turned back to form bottom and side square-projecting flanges **20** and **21** respectively, framing the contour of the drawer container. The square-projecting flange **20** is formed with two cutouts **22** on a vertical line with the studs **19**.

Rearwardly, against the rear edge of each sidewall sheet **8**, there is welded a vertical strip **23** having a square bottom surface supported on the outer periphery of the slideway of the drawer; this strip extends upwardly on the inner face of this sheet and terminates in a horizontal arm **24**. Both opposed arms **24** define, at their adjacent ends, right-angled projections or noses **25** corresponding in spacing to that of the outer side walls of the recess in the ribs **2** in the bottom of the drawer. The sides **8** are braced by a cross-member **26** provided with end lugs **27** at right angles, which provides a bridge supporting the arms **24** and allows the drawer to be grasped from the rear. The lugs **27** are bolted to each reinforcing strip **23** by a threaded rod **28** provided with a nut **29**, the head of which carries an outer roller **30** projecting above and below the rolled bead **9** and nearly tangent to the end of the drawer.

The rear end of the bottom of the drawer is braced by an S-sectional cross-member **33**, which with its lowermost arm seals the inlet into the slideways **3** and the outlet from the ribs or grooves **2** in the bottom of the drawer

and, with its uppermost arm 34, formed with right-angled ends bolted to the reinforcing strips 23 integral with the sides 8, defines a lower cross-brace for the said sides. After the drawer and its cards-clamping device have been mounted, it is permanently secured by doubling back a lug or flange 35 formed in the edge of its lower flange 33, over the bottom sheet of the channel 1, by a square hole 36 in the end of this channel, identical to the previously-mentioned hole 10.

Each drawer contains a cards-clamping device (Figs. 1 to 6). This device includes a longitudinally-slidable carriage, blockable at any selected point along the length of the drawer and carrying a back-rest for the cards; said carriage is adapted to slide forwardly to compress the cards against the front wall on actuation of a lever which provides for the blocking of the carriage.

The frame of this carriage is formed by a bent sheet (see in particular Fig. 6), the bottom 37 of which is formed with a pair of upwardly projecting ribs 38 defining between them, and imparting stiffness to, a slideway 39, the sides 40 of said frame being upraised to provide flat side flanges defining a hollow enclosure with a projecting central portion. A press-formed strip 41 formed with side ribs 42 into which the side flanges are adapted to fit, forms the top and bottom of the enclosure. The top wall is formed at its top with a slot having inturned edge flanges, forming a segment of a helical slideway 43 with straight ends 44 and a right-hand pitch (Fig. 4). Slots 45 are formed in the end walls.

The two above-described sheets are assembled end to end by heavy strips 46 which serve to guide the carriage. These strips form a clevis and the branches of this clevis are obtained by a cambering step, after first stamping therefrom an inner lug 47 formed with a central slot 48 and defining the lower arm, from a lug 49 defining the upper arm and housed between the ribs 42 of the frame. A screw 50 clamps this clevis to the end of the sheet elements, and projections 51 punched from out of the sheet element 41 on the edge of the slot 45 abut against the end wall of the cut-out of the lugs 47 and prevent the strip 46 from becoming disengaged from the ends of the frame.

Each of the strips 46 forms, at its end, a longitudinal flange or ski member 52 adapted to slide under the edge 4 and over the bottom of the slideway 3 of the drawer, into which it can be inserted endwise prior to assembly of the end bottom cross-member 33, the vertical arm of the bracket 46 extending through the slideway 6. The ski member 52 is substantially rectangular. On its lower side, projecting and slightly upraised corners 53 are adapted to slide against the inner side of the slideway (see Fig. 3). Externally, double cambers near the ends define a pair of rounded transverse projections, by which the ski member takes support on the bottom of the slideway, and corners raised in the form of upstanding noses, which are placed under the sheet edge flange 4, being spaced therefrom by a very small clearance gap. The ski member is moreover formed with a very shallow depression 55 under the level of its upper face and midway from its inner side.

Above the depression 55 are located the shoes 56 provided with inwardly-projecting noses 57 of a transverse bridge part 58 extending across the body of the frame through cutouts 45. The projecting noses 57 engage into the slots 48 formed in the lugs 47 of the bracket 46, forming the ski member. The bridge member 58 is of increased height in its central part and defines, downwardly and at its centre, a projection 59 serving to centre a spring 60, which is supported against the bottom of the channel 39 of the frame, and tends to spring upwards. The said parts 58 is formed with a vertical slot 61 through which extends a rod 62 sliding in the side flanges 40 of the frame.

Said rod is secured to the supporting plate 63 or "back-rest" of the cards. This back-rest 63 is formed from a cut-out sheet, in which are press-formed rearwardly-projecting diagonal stiffener ribs 64, the recesses of which intersect the front support surface 65 and prevent the cards from adhering. The sheet element is reinforced by flanges 66 turned back at right angles rearwardly and having a filleted top edge 67, and is formed with two side holes 68 having their walls defined by press-rolled beads through which the fingers may be inserted to disengage the ultimate card of the stack. The back-rest secured to the rod 62 is also carried by a pin located above the rod and also sliding across the side flanges 40, which are reinforced at this level by washers 69. The pin 70 has mounted on a shoulder 71 thereof a cam 72, rotatable on said shoulder and retained longitudinally by a bushing 73 supported against a threaded washer 74 providing a block-nut for the nut 75 clamping the back-rest. The cam 72 carries an operating lever 76 projecting out of the frame through the slot 43—44 and terminating in a spherical knob 77. This cam is a heavy block of metal; applied against its periphery is the bridge member 58 urged upwards by its spring 60.

The cam's active profile is visible in Figure 3, which illustrates the device in blocking position. It includes the following cam-sections, starting from the portion which is in contact in card-releasing position and which is formed by a flat section 78 stabilizing the lever 76 in the uppermost position of the bridge member: a sector of increasing radius 79, corresponding to the angular travel over which the lever moves in the front end 44 of the cam slot, then a constant-radius sector 80, corresponding to the angular travel of the lever 76 over the helical portion of the cam slot and which merges at its end with a sector 81 of slightly greater radius, corresponding to the angular travel of the lever 76 at the opposite front end 44 of its cam slot.

When the lever 76 is shifted down to its card-releasing position (opposite from the position shown in Figs. 3 and 5), the back-rest member is retracted and the bridge member 58 is raised to the position shown in dot-and-dash lines; the carriage is accordingly free to slide over the length of the drawer upon its skis resting on the bottom of the slideways 3 through the rounded part of their cambered sections 54. To clamp the cards against the front of the drawer, the carriage is pulled forwards until the back-rest is applied against the last card, and the lever 76 is actuated leftwards (as shown by the arrow F of Fig. 3). In the first part of this rotation, the back-rest remains stationary since the lever 76 pivots in a frontal plane at the rear end of the cam slot 44; however, as the radius of the cam increases (section 79), the bridge 58 is forced down, its shoes 56 pressing against the edges of the sheet flanges 4 midway of the length of the skis. These edges buckle between the supports provided by the noses of the end cambered sections 54 and the carriage, is then blocked against further longitudinal movement. Rotation of the lever 76 proceeding further, its rod slides along the helical portion 43 of its slot, carrying its cam with it in a longitudinal feed motion and through it the pin 70 and the back-rest; the cards are compressed in the forward direction without any substantial change occurring in the degree to which the carriage is clamped on its slideways (this is the part of the travel corresponding to the substantially constant radius 80). At the end of this helical portion 43, the lever engages the front end 44 of the slot, compression is relieved, and an additional blocking effect is exerted on the carriage (due to the increase in the cam radius at 81). The shoes 56 of the bridge member, on being lowered a small distance, force the sheet margins 4 into the depressions 55 in the ski members, thereby producing a final blocking effect by jamming the metal sheeting. At the end of the cam slot 44 a slight rearward shoulder may be provided in order to properly stabilize the lever in its cards-clamping position.

It is seen that the carriage-blocking and the cards-clamping effects are secured by the mere leftward rotation of a

lever (76) in the direction of arrow F in Fig. 3. Disengagement is obtained conversely by a rightward rotation. Obviously the respective directions might be reversed, by reversing the cam and imparting an opposite pitch to the helical slot. The blocking action so produced leaves no trace on the sheet metal of the margins 4 of the bottom member, which is stressed only under elastic distortion, and may be exerted on any desired point along the length of the drawer. While it is very efficient, it yet retains a degree of flexibility owing to the resiliency of the components and to the fact that the blocking and concurrent clamping actions may be exerted progressively. This is because a slight sliding movement of the carriage may occur before the final blocking sets in, i. e. when the resistance opposed to the advancing movement of the back-rest is too high. This stroke is so calculated as to ensure thorough clamping of the cards when the drawer is full.

The clamping device is therefore very easy to operate, so that it may be operated rapidly and the cards are always subjected to the proper degree of clamping for blocking them in the drawer.

It will be understood that the invention is in no way restricted to the specific arrangements illustrated and described, in which various modifications may be made within the scope of the invention as defined in the ensuing claim.

What I claim is:

A filing drawer with cards clamping device, comprising

in combination a drawer having a bottom and side walls, lateral channels formed in said bottom along said side walls on the sides of a flat cards supporting surface, a flange horizontally projecting from each side wall above the adjacent channel at a level lower than said supporting surface, a carriage for supporting the cards comprising a central body with lateral ski members sliding in said lateral channels and a back-rest for the cards supported by longitudinal rods sliding through said carriage body, a vertically movable bridge member through the lower part of said carriage body having its ends directly above said flanges which overlap said lateral channels, a spring connected between said bridge and carriage for urging said bridge upwardly, a cam rotatably mounted on one of said supporting rods and engaging said bridge for downward movement thereof against said spring and of a width sufficient to remain in engagement therewith in all projecting positions of said supporting rod, and a movable lever secured to a side of the cam and projecting through a helical groove of said carriage body, so that by moving the lever the cam while rotating forces said bridge downwardly in clamping engagement of said flanges against the ski members and while longitudinally displacing its supporting rod moves the back rest against the cards to be clamped.

References Cited in the file of this patent

UNITED STATES PATENTS

2,482,099 Cleven et al. ---------- Sept. 20, 1949