Jan. 15, 1929.

R. A. EDGREN

1,698,946

BIN DIVIDER

Filed Aug. 13, 1926

2 Sheets-Sheet 1

Fig. 1.

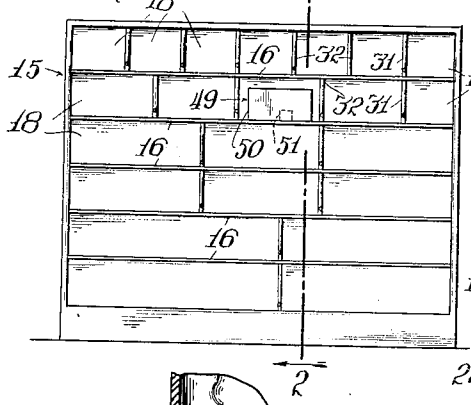


Fig. 2.

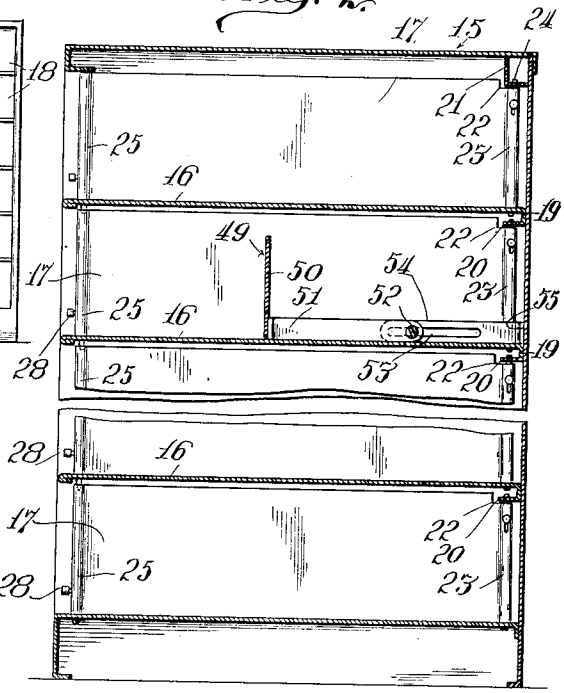


Fig. 4.

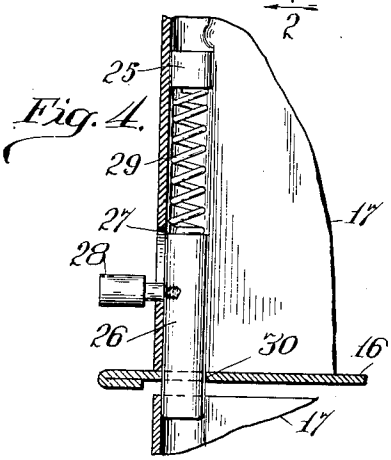
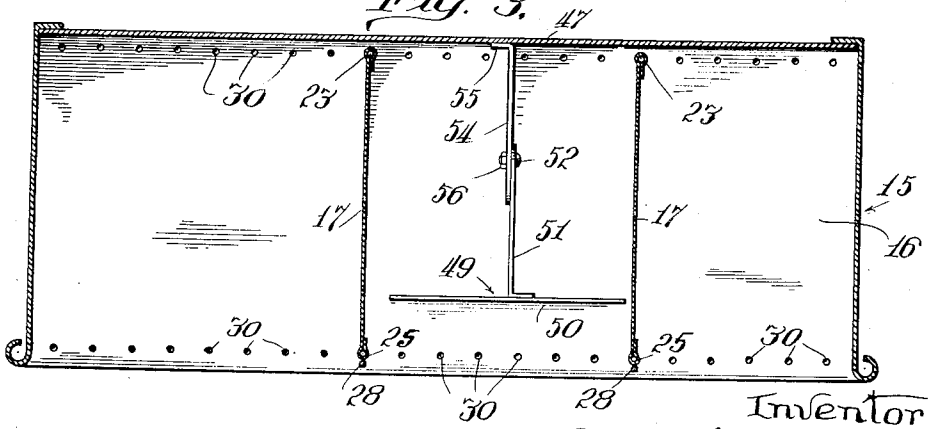


Fig. 3.



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Jan. 15, 1929.

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1,698,946

BIN DIVIDER

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2 Sheets-Sheet 2

Fig. 5.

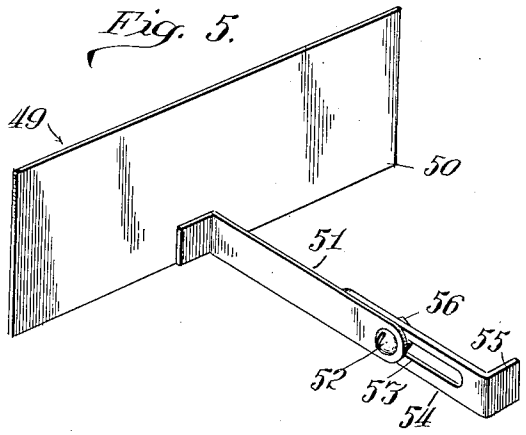


Fig. 6.

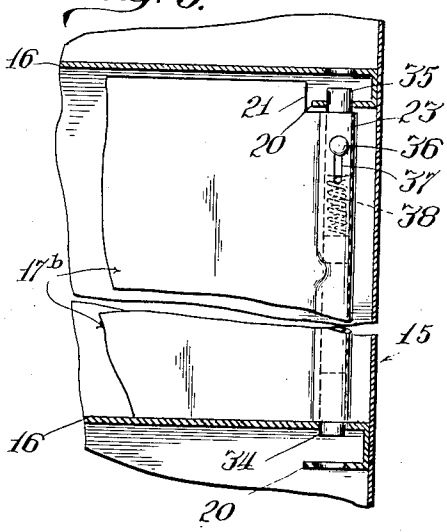


Fig. 7.

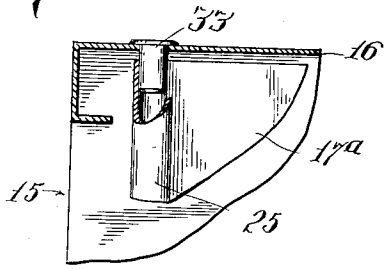


Fig. 8.

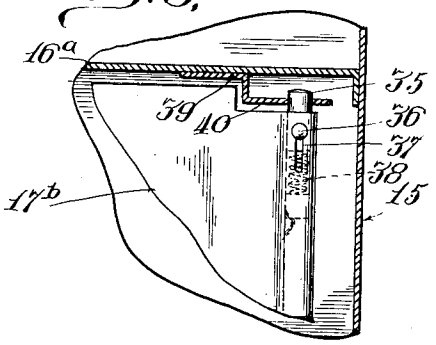


Fig. 9.

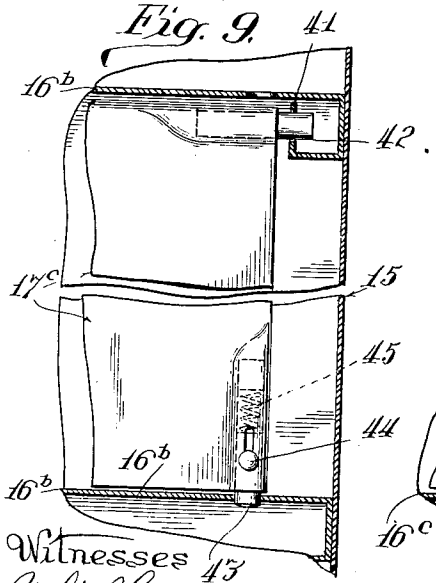
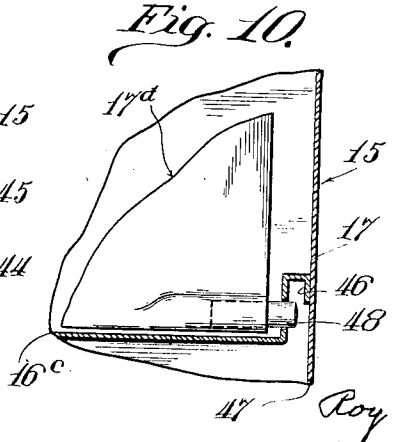


Fig. 10.



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Patented Jan. 15, 1929. 1,698,946

UNITED STATES PATENT OFFICE.

ROY ARTHUR EDGREN, OF CHICAGO, ILLINOIS.

BIN DIVIDER.

Application filed August 13, 1926. Serial No. 129,024.

My invention relates to means whereby the various compartments or shelves, which are fixedly secured in place within the cabinet, may be divided into separate bins or compartments and the compartments resulting from the fixedly secured shelves made of less transverse width to adapt the cabinet to different commodities of varying size and nature; the invention contemplating means adjustably secured in place to permit placing of the dividers at any desired point relative to the side walls of the cabinet, to suit requirements.

Another object of my invention is to also provide means which may be adjustable relative to the front and rear walls to provide compartments of less depth or rearward dimensions than the normal depth of the cabinet.

The objects and advantages of my invention will be readily comprehended from the detailed description of the accompanying drawings, wherein—

Figure 1 is a front elevation of a cabinet provided with my improved adjustable dividers.

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a horizontal sectional view of a cabinet showing the application of my improved false back.

Figure 4 is a detail sectional view of one end of the bin or compartment divider illustrating the form employed in Figure 2.

Figure 5 is a detail perspective view of the false back.

Figure 6 is a detail sectional elevation of a portion of the rear end of a cabinet illustrating a modified form of my improved bin divider.

Figure 7 is a detail perspective view of a portion of the front end of a cabinet and portion of bin divider illustrating another modified form of securing the divider in place.

Figure 8 is a detail sectional elevation illustrating another modification of fastening for the rear end of the divider.

Figure 9 is a similar view illustrating a further modification.

Figure 10 is a detail sectional elevation illustrating a further modified form for securing the lower end of the divider in place at the rear end of the cabinet.

My invention relates more particularly to means for dividing the various bins of a cabinet into a number of small compartments of any desired size in so far as lateral dimensions are concerned, as well as to means whereby the depth of the bin from front to rear may also be controlled. That is to say, my invention relates more particularly to a cabinet preferably constructed of sheet metal having top, bottom and side walls, generally indicated at 15 in Figures 1 and 2, and provided with permanently secured shelves 16 whereby the cabinet is divided into more or less standard sized bins or compartments. In order to adapt the cabinet to various uses and needs and thus obviate the necessity of constructing a numberless lot of special metal cabinets, I provide my improved bin dividers consisting of the sheet metal plate or partition 17 adapted to extend from front to rear of the cabinet as shown in Figure 2 and provided with means whereby the dividers may be positioned to provide bins or compartments of any desired lateral width as illustrated at 18 in Figure 1.

In the exemplification of the invention as illustrated in Figure 2, the rear ends of the shelves 16 are shown turned downward and forward at 19 so as to provide the short horizontally disposed flange portion 20 spaced below the shelf proper; while the top of the cabinet, at the rear inner side is shown provided with the angle plate or bar 21 which extends from side to side of the cabinet as is also true of the rear bent ends of the shelves. The dividers 17 are preferably made of slightly less vertical height than the height of the bin in order to provide slight clearance between the top of the divider and the shelf 16 or cabinet top, as shown in Figure 2 to permit easy insertion of the dividers. The rear end of the divider is cut away at 22 to receive the angle bar 21 in one instance and the forwardly disposed flange 20 in the other instances; and the rear ends of the dividers 17 in Figure 2 are beaded or curled upon themselves as shown at 23 to provide a channel or socket. The upper end of the bead or curl is provided with a pin or projection 24 adapted to enter a suitable slot or hole formed in the angle member 21 and in the forwardly disposed flanges 20 of the cabinet top and the shelves, respectively.

The forward ends of the dividers 17 in Figure 2 are likewise beaded or curled upon themselves at 25 in order to provide a channel or socket in which a pin or plunger 26 is slidably mounted. The pins 24 in this form are fixedly secured in place. The forward end of the curled portion 25 is slotted at 27 for passage of the button or finger grasp 28 threaded in or otherwise suitably secured to plunger 26. The channel formed by the curl or bead 25 is shown provided with a suitable coil spring 29 which normally maintains the plunger or pin 26 in its depressed position shown in Figure 4 when the divider is in proper position. The forward longitudinal ends of the shelves 16 are shown provided with holes 30, see Figure 3, preferably arranged equal distances apart throughout the transverse length of the shelf for the purpose of receiving pin or plunger 26; and the rear longitudinal edge of the shelves, at points in alignment with the holes 30, are also preferably provided with openings 30, as shown in Figure 3. The plungers or pins 26, in the construction shown in Figures 2 and 4, are intended not only to pass through the respective holes 30 at the forward ends of the shelves 16, but also to enter the upper end of the socket or channel formed by the forward curled end 25 of the next succeeding lower divider 17, see Figures 2 and 4. That is to say, where the dividers between the succeeding shelves are to be arranged in vertical alignment with each other as indicated at 31 in Figure 1, the plunger or pin 26 not only retains the forward end of the one divider 17 in place, but also holds the upper end of the lower divider in place. With the construction shown in Figures 2 and 4, the dividers 17 are inserted by sliding the dividers rearwardly between the respective shelves at the desired point in alignment with a slot in flange 20 or 21, so as to permit the short pins 24 at the rear end to enter the openings or slots in the angle member 21, while the pins 26 at the forward end are forced upwardly against the action of the springs until the plungers or pins 26 register with the proper hole 30 at the forward edge of the shelf; the plungers then being released. Where a divider is to be inserted immediately beneath, the pin or plunger 26 of the divider above is retracted sufficiently until the lower divider is vertically positioned and its socket aligned with the upper pin or plunger 26.

Where the dividers 17, between the respective shelves are not to be arranged in vertical alignment, but are to be disposed in the staggered relation indicated at 32 in Figure 1, the spring-controlled plunger 26 may be omitted. That is to say, a divider 17^a, a portion whereof is shown in Figure 7, may be employed having the forward curled or beaded end 25 and the forward end of the divider held in place by means of a loose headed pin 33, see Figure 7, inserted through an opening 30 in the shelf 16 immediately above the divider 17^a; it being understood that the rear or inner end of the divider 17^a may be of the construction illustrated in Figure 2. My reason for employing the fastening means illustrated in Figure 7 instead of employing the spring controlled plunger 26 shown in Figure 4 where the dividers are not arranged in vertical alignment, is for the purpose of providing an unobstructed compartment or bin beneath the divider.

Instead of forming the rear or inner ends of the shelves 16 as shown in Figure 2, the flanged end may be omitted and the shelf adjacent to the rear longitudinal edge provided with holes 30, as in Figure 3, aligned with those adjacent to the forward edge. If the permanent pins 24 are employed they may be of length just sufficient to enter the hole in the shelf above; the dividers being inserted in an inclining manner to permit the stationary pins 24 to enter the hole, at which time the divider may be righted or brought to a perpendicular position. Of course, if desired the pin at the rear end of the divider may be of the construction shown in Figure 4; that is to say, the pins at both ends of the divider may be of the spring controlled type shown in Figure 4.

In Figure 6 I show a modified form wherein the divider 17^b, at the rear end, is secured in place both at top and bottom by providing the lower end of the curl or beaded portion 23 with a stationary pin or lug 34 while the upper end of the channel or socket formed by the bead or curl is provided with a spring-controlled plunger or pin 35 controlled by the finger grasp or button 36 extending through a slot 37 in the bead; the plunger being normally forced upwardly by the coil spring indicated in dotted lines at 38. The construction in Figure 6 differs from that in Figure 2 in that both top and lower rear ends of the divider are secured in place; the forward end of the divider being held in position by either employing the method shown in Figure 4 or the method disclosed in Figure 7 depending upon the arrangement of the dividers intermediate of the succeeding shelves.

With the construction shown in Figure 6, the divider is inserted in an inclining manner until the stationary pin 34 is in the desired hole in the shelf; the divider then righted and plunger or pin 35 released.

In Figure 8, I illustrate a divider which may be substantially like the divider 17^b, except that in this instance the shelf 16^a at the rear end is provided with a separate bar or plate of Z-shape configuration in cross-section as shown at 39 and secured to the bottom at the rear side of the shelf 16^a to pro-

vide the horizontally disposed flange portion 40 apertured to receive the spring-controlled pin or plunger 35.

In Figure 9 the shelves 16^b of the cabinet at their inner ends are formed with the forwardly and thence upwardly bent edge presenting the box-like formation having the upstanding flange portion 41 apertured to receive a fixedly secured pin 42 secured in the upper edge of the divider and disposed horizontally rearward from the divider 17^c. The pin 42 is suitably secured to the divider 17^c, as for example by beading or curling the rear upper edge about the pin as shown. In this construction, the rear lower end of the divider 17^c is also socketed in any suitable manner to provide a channel for the pin or plunger 43 having finger grasp 44 extending through a suitable slot in the beaded or curled portion of the divider; the pin or plunger being depressed by means of a suitable spring indicated in dotted lines at 45.

In Figure 10, I illustrate another modified form of my invention in so far as the rear ends of the shelf and of the divider 17^d are concerned. The shelf 16^c of the cabinet is formed at the rear end with an upturned longitudinal edge bent upwardly and rearwardly into the channel formation illustrated, with a depending side or flange 46 of the channel portion secured to the rear wall 47 of the cabinet 15. In this construction, the upstanding rear edge of the shelf 16^c is apertured to receive a fixedly secured pin 48 arranged in the lower rear edge of the divider 17^d; the pin 48 being shown secured in place by curling the rear lower edge of the divider about the pin.

With my improved dividers, it is apparent that more or less standard sized cabinets may readily be converted into a series of varying bins and thus adapted to commodities of different sizes; for example, for the purpose of holding automobile parts, machine elements, etc., while at the same time the compartments or bins may readily be enlarged or made smaller to accommodate the bin or cabinet the different uses. The various types of dividers, with the shelves formed as shown, will permit an arrangement of dividers in vertical alignment with each other between succeeding shelves; or permit an arrangement of dividers in vertical staggered relation where one shelf is to be divided into a certain sized bin or compartment, while the next succeeding shelf is to be divided into different sized bins or compartments; the use of the proper divider in all instances permitting a flush unobstructed shelf to be obtained.

My invention also consists in providing a false back 49, shown in detail in Figure 5, consisting of a plate 50 of suitable length and width to adapt it to the spacing intermediate of the succeeding shelves. The plate 50, at its rear lower edge, is provided with an arm 51 fixedly secured thereto and apertured to receive a bolt 52 which latter extends through a longitudinal slot 53 formed in a lapping bar 54, the free outer end whereof is bent at right angles, as shown at 55, to engage with the rear wall 47 of the cabinet. The two arms or bars 51 and 54 are adjustably secured together by the bolt 52, the threaded end whereof is provided with a suitable nut 56, see Figure 3. With this construction it is apparent that the horizontal depth of the compartment or bin may be regulated by contracting or distending the arms or bars 51, 54 so as to position the vertically disposed false back 50 at the desired distance from the front open side of the cabinet, to provide a shallow compartment for small articles such as bolts, nuts and the like; the false back being loosely placed in any desired compartment so as to permit its easy removal.

I have illustrated what are considered to be simple embodiments of my invention whereby standard cabinets may be readily converted and adapted to varying needs and commodities; but I do not wish to be understood as limiting myself to the exact constructions shown and described.

What I claim is:

1. In a device of the character described, the combination with a metallic cabinet provided with shelves, the rear longitudinal edges of the shelves being flanged and the flanges provided with pin receiving openings while the forward longitudinal edges of the shelves have spaced openings in alignment with those in the flanges, sheet metal plates adapted to fit vertically between the respective shelves, the marginal edges of the plates being curled upon themselves to provide sockets, and pins mounted in said sockets and insertible in said openings and in said sockets for removably securing each plate in place.

2. In a device of the character described, the combination of a cabinet provided with shelves having spaced apertures along the front longitudinal edges, the shelves at their rear longitudinal edge having angularly disposed offset portions extending throughout the length of the shelves and provided with spaced apertures aligned with the apertures at the front edges of the shelves, said offset portions being adapted to provide pin-receiving sockets, partition members adapted to fit vertically between the respective shelves, the rear edges of said members being curled upon themselves to provide pin-receiving sockets, pins carried in said sockets and insertible in the apertures at the front longitudinal edges of the shelves and in the apertures of said offset portions so as not to project above the shelves.

ROY ARTHUR EDGREN.