Jan. 11, 1966 K. A. LUNDELL 3,228,740

MODULAR DRAWER HANDLE

Filed Jan. 22, 1964 4 Sheets-Sheet 1

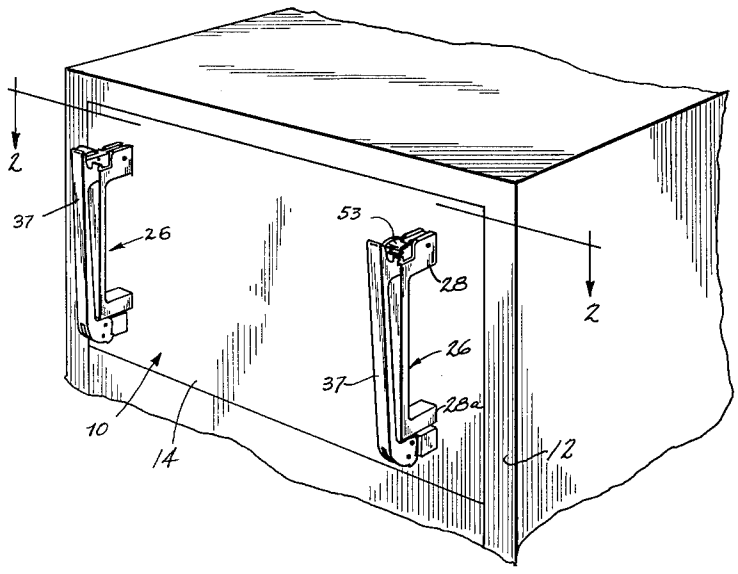


Fig. 1

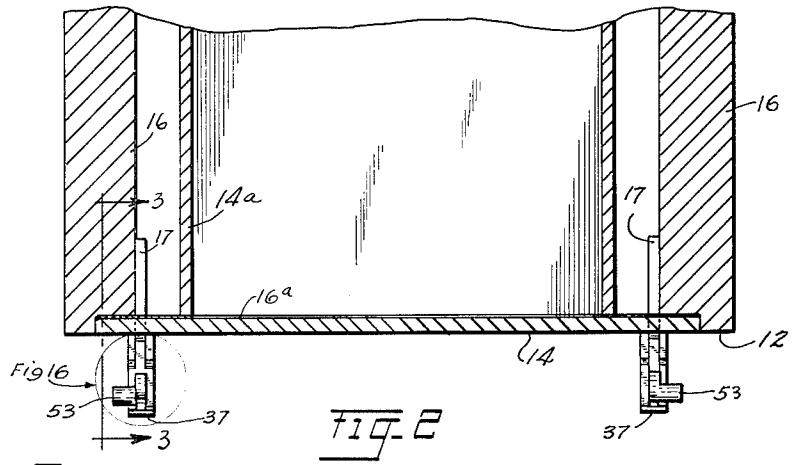


Fig. 2

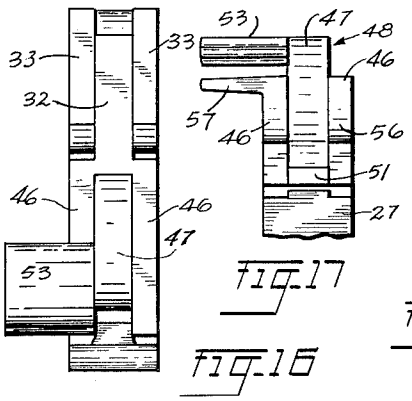


Fig. 17

Fig. 16

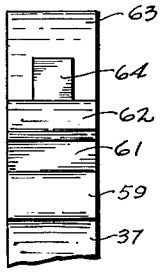


Fig. 18

INVENTOR
KERMIT A. LUNDELL

BY

BY

Bean, Brooks, Buckley & Bean
ATTORNEY

Jan. 11, 1966 K. A. LUNDELL 3,228,740

MODULAR DRAWER HANDLE

Filed Jan. 22, 1964 4 Sheets-Sheet 2

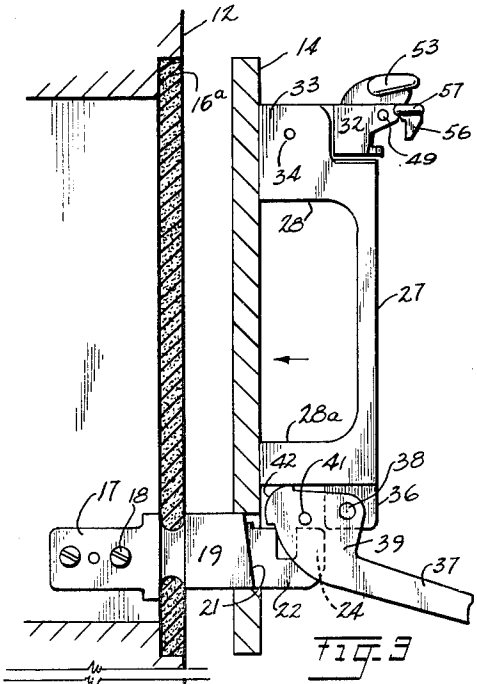


Fig. 3

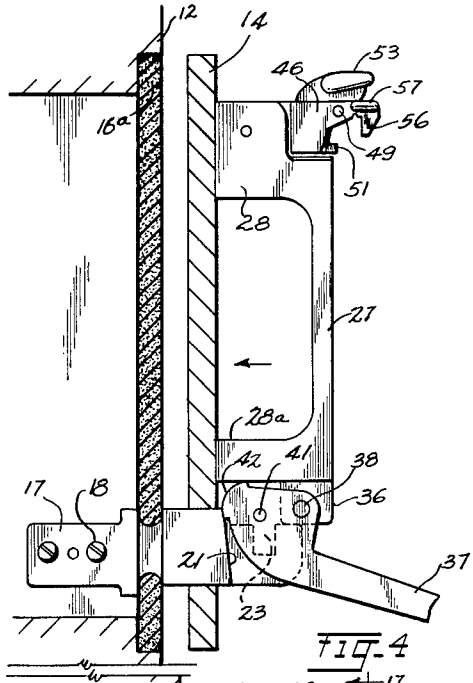


Fig. 4

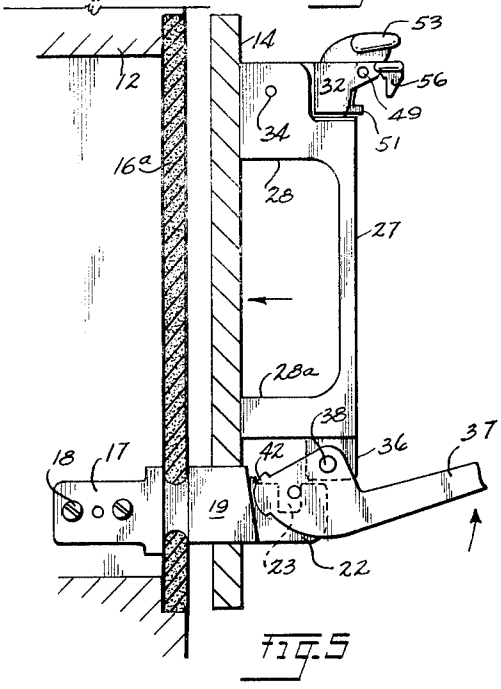


Fig. 5

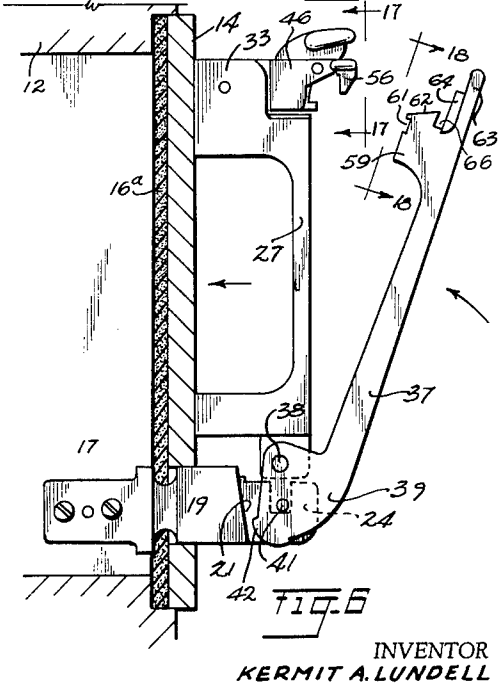


Fig. 6

INVENTOR
KERMIT A. LUNDELL

BY

Beau, Brooks, Buckley & Beau
ATTORNEY

Jan. 11, 1966 K. A. LUNDELL 3,228,740

MODULAR DRAWER HANDLE

Filed Jan. 22, 1964 4 Sheets-Sheet 3

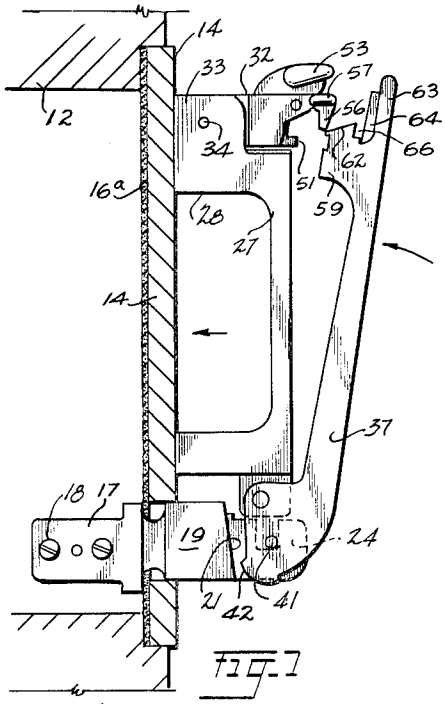


Fig. 7

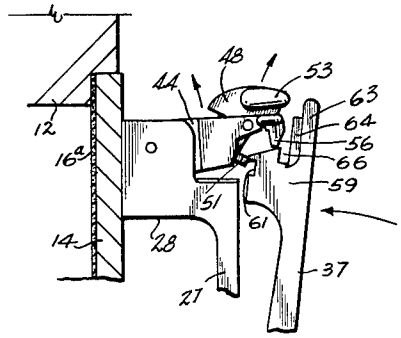


Fig. 8

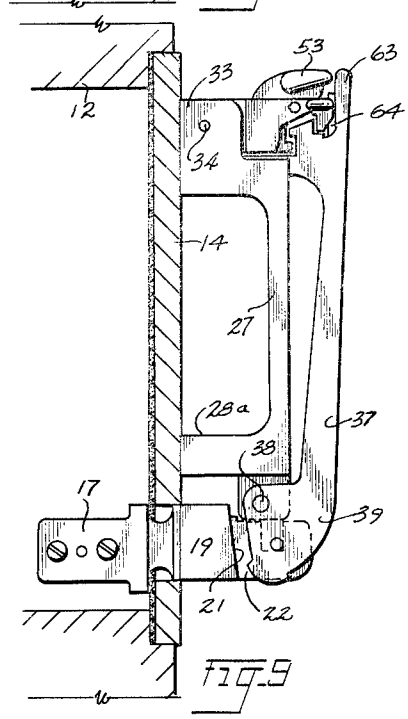


Fig. 9

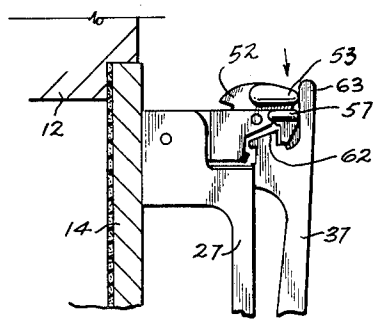


Fig. 10

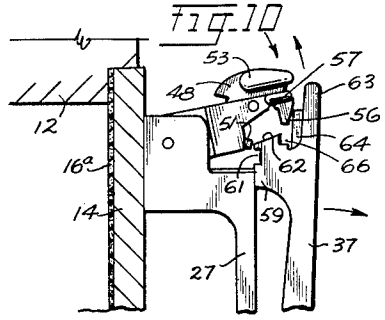


Fig. 11

INVENTOR
KERMIT A. LUNDELL

BY Beam, Brooks, Buckley & Beam
ATTORNEY

Jan. 11, 1966 K. A. LUNDELL 3,228,740

MODULAR DRAWER HANDLE

Filed Jan. 22, 1964 4 Sheets-Sheet 4

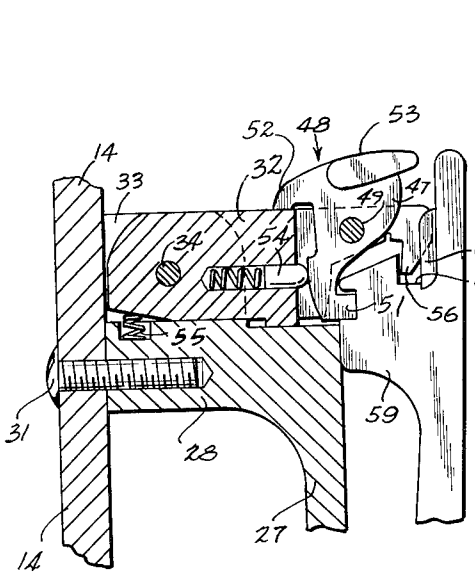


FIG-12

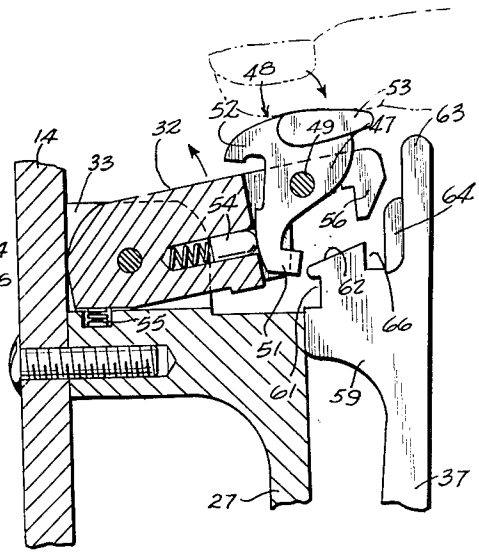


FIG-13

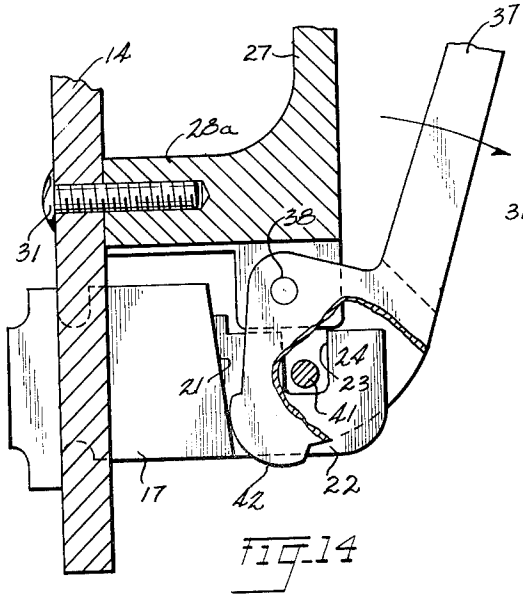


FIG-14

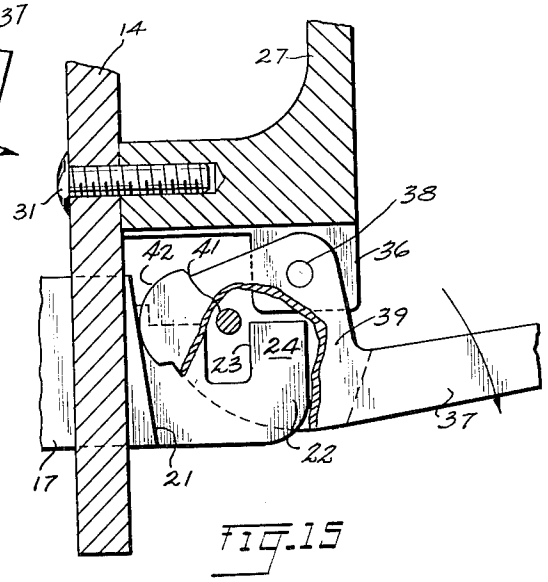


FIG-15

INVENTOR
KERMIT A. LUNDELL

BY Beam, Brooks, Buckley & Beam
ATTORNEY

United States Patent Office 3,228,740 Patented Jan. 11, 1966

3,228,740

MODULAR DRAWER HANDLE

Kermit A. Lundell, Jamestown, N.Y., assignor to Weber-Knapp Company, Jamestown, N.Y.

Filed Jan. 22, 1964, Ser. No. 339,447
7 Claims. (Cl. 312—320)

This invention relates to improvements in combination handle and latch assemblies for drawers and the like, and more particularly to such devices as are adapted to perform the multiple functions of carrying handles and drawer "pull" handles and drawer levering devices and drawer holding latch mechanisms.

The device of the present invention is specifically designed to facilitate manually carrying a heavy drawer or the like and then inserting it in horizontally moving attitude into a cabinet, rack or the like, to a point short of its intended "home" position; and then through manipulation of a lever portion of the mechanism to pry the drawer into its final "seated" and locked position within the cabinet against any accidental disengagement therefrom. Then when it is desired to remove the drawer from the supporting rack or cabinet, the device is manually actuated first to release the holding latch mechanism and then to lever the drawer out of its frictionally held position, and finally to function in the manner of a drawer "pull" and carrying handle device.

For example, functionally integrated groups of electronic equipment are often set up in banks of housings of drawer-like form, thereby providing for individual installation and/or replacements of the "modules" which, when pressed "home" into their prescribed positions within the supported rack or cabinet, become electrically interconnected through plug-jacks or the like to form a complete electrical system. In such installations fully positive electrical interconnections are of course prerequisite. The interconnection devices usually employed for such purposes are in many cases large in number and are of the tight slide-fit contact types; and therefore considerable force must be applied during certain phases of movements of a module drawer in order to force it into its final and electrically connected position, and to release it therefrom. Also, such installations often require the provision of compression gaskets or the like in order to atmospherically seal the drawer in closed position; and the presence of such gaskets still further increases the loads to be overcome in driving the drawer into "home" position.

The present invention has for one of its objects to provide an improved device that is usable as a handle for carrying a module or drawer from place to place and then leading it to slide into a rack or cabinet; and also as a lever for forcing the drawer to then move into its final position, and then furthermore operating to automatically lock the module in its firmly seated and electrically connected position.

Another object of the invention is to provide a handle-latch assembly as aforesaid that includes a lever member operable to force the drawer to move against frictional constraints or the like both into and out of its "home" position, thereby facilitating the "making" and releasing of its electrical connections, as explained hereinabove.

Another object of the invention lies in the provision of a handle-latch assembly as aforesaid wherein a hinged lever is provided to have latching engagement with the handle proper following full closing of the drawer, such that no shocks, vibrations or other forces, short of complete damage to the mechanism, will be effective to permit unintended release of the lever and movement of the drawer.

A further object of the invention is to provide in a device as aforesaid improved means for locking the drawer

in its rack or cabinet, said means including a lever and multiple latch devices that require sequential multiple manual manipulations in two different directions to effect release of the latches from the lever and consequent release of the drawer preparatory to use of the lever to force the drawer to move.

Other objects and advantages of the invention will be more fully understood from a consideration of the following specification, taken in conjunction with the accompanying drawing in which:

FIG. 1 is a fragmentary isometric view showing a portion of a rack or cabinet and a drawer locked in closed position therein by means of a pair of mechanisms of the invention;

FIG. 2 is a horizontal sectional view, taken substantially on the line 2—2 of FIG. 1, and showing the general relationship between the drawer handle-latch devices and the cabinet-mounted keepers;

FIG. 3 is an enlarged fragmentary vertical sectional view taken generally as suggested by the line 3—3 of FIG. 2, and showing the relation of the handle and its lever and latch mechanisms before the drawer reaches its initial and temporary "stop station" when approaching its final "home" position in the cabinet;

FIG. 4 is a view similar to FIG. 3 but shows the keeper acting as the initial or temporary "stop" to further closing movement of the drawer;

FIG. 5 is a view similar to FIG. 4 showing the lever being raised to cause the pin thereon to enter the keeper slot;

FIG. 6 is a view similar to FIG. 5 showing the lever pin exerting pull and forcing the drawer to move in towards further closed position;

FIG. 7 is a view similar to FIG. 6 showing the parts at a still closer position of the drawer head to the cabinet, and initial contact of the strike portion of the lever with one of the latch devices carried by the handle;

FIG. 8 is a view similar to the upper portion of FIG. 7 but shows the strike portion of the lever about to be engaged by the second latch device of the mechanism;

FIG. 9 is a view similar to FIGS. 7–8 but shows how the latches lock upon the strike portion of the lever when the drawer is fully closed;

FIG. 10 is a view similar to the upper portion of FIG. 9 but illustrates the first step in manual release of the lever when the drawer is to be withdrawn from the cabinet;

FIG. 11 is a view similar to FIG. 10 showing how both lever latches are manually disengaged from the strike portion of the lever;

FIG. 12 is a fragmentary enlarged vertical sectional view of the components of the mechanism as they appear in FIG. 9;

FIG. 13 corresponds to FIG. 12 but shows the parts when completely released as in FIG. 11;

FIG. 14 is an enlarged vertical sectional view of cooperative parts of the lower end of the lever and the drawer keeper when the lever is being manipulated to start to pry the drawer away from the frictional restraints of the electrical connection devices;

FIG. 15 is a view similar to FIG. 14 but showing the final cam action of the lever on the keeper to disengage the drawer and force it to move out into fully released position;

FIG. 16 is an enlarged fragmentary top plan view of that portion of the structure encircled in FIG. 2;

FIG. 17 is a frontal view of an upper portion of the handle and lever and latches; being taken as suggested by the line 17—17 of FIG. 6; and

FIG. 18 is a rear view of a portion of the lever, being taken as suggested by the line 18—18 of FIG. 6.

As shown in the drawing herewith, the invention may be embodied in conjunction with a drawer or "module"

or the like as indicated generally at **10** (FIG. 1) which is adapted to be housed within a rack or cabinet having a front view frame structure as indicated at **12**; it being understood of course that the rack **12** will be provided with support rails or the like running horizontally from front to rear upon which the drawer **10** may slide or roll. As shown in FIG. 2, the drawer includes the usual front or "head" plate **14** and side walls **14***a*; and the rack **12** includes partition or side walls as indicated at **16—16**. Perimeterally of the drawer opening the front face of the rack is recessed to accommodate a compression gasket **16***a* formed of foam rubber or the like, whereby when the drawer is "home" in fully closed position it is atmospherically sealed in the cabinet.

As shown in FIG. 2 a drawer "keeper" **17** is fastened to the inside of each side wall **16** of the cabinet, as by means of screws **18** (FIGS. 3 etc.) and the drawer head plate **14** is suitably slotted to receive the outer extending ends **19** of the keepers in free-sliding relation therethrough. At their outer ends the members **19—19** are reduced at their opposite sides to provide slightly inclined frontal land portions **21—21** at opposite sides of a centrally disposed reduced width end portion **22** which is formed with an upwardly facing notch **23**, thereby terminating in an upwardly directed hook portion **24**. A combination handle and lever and latch mechanism, as indicated generally at **26**, is mounted on the drawer front plate in conjunction with each of the keepers **19**; being therefore shown herein as being two in number; but it is to be understood that only one mechanism, or any other desired number thereof, may be employed in conjunction with a drawer, according to the weight and dimensional characteristics thereof.

As shown herein, each mechanism **26** of the invention includes a fixed handle portion **27** having legs **28**, **28***a* fastened to the drawer head plate **14** as by means of screws **31** (FIGS. 12–15). The top leg portions **28** each pivotally mounts a primary latch member **32** between a bifurcated upper extension portion **33** thereof, by means of a pivot pin **34**. The lower leg portion **28***a* of each handle is formed with an extension **36** upon which is pivotally connected the bifurcated lower end of a lever **37** by means of a pin **38**; the end of the lever being bifurcated to provide parallel ears **39—39** straddling the keeper portions **22, 24** and the handle portion **36** and receiving the ends of the pivot pin **38**.

Further details of the operative parts of the latching structure and the lever **37** will be set forth herebelow, but for the moment it will be understood that the drawer may be transported to or from the cabinet by merely grasping the combined handle and lever mechanisms as shown in FIG. 1 and letting the drawer hang therefrom. However, when the drawer has been lifted and slid into the cabinet (supported on a suitable suspension device, not shown) the latch **32** is then manipulated to release the lever **37**, allowing it to drop into the position shown in FIGS. 3 and 4. The ears **39—39** include rounded cam surface portions **42** having rather extensive movements in circular paths about the pin **38** when the lever **37** moves between the positions of FIGS. 3 and 9. An actuator dog in the form of a pin **41** is carried by and bridges the ears **39—39**; being located remote from the pivot pin **38**. Thus, the dog **41** moves in an arc about pivot pin **38** when the lever is moved.

Referring now particularly to FIGS. 3–6; as seen in FIG. 3 when the drawer is initially inserted and moved inwardly of the cabinet with the lever **37** now dropped to its lowermost position; the dog **41** is thereby disposed above and clears the end **24** of the keeper **17**. Further inward movement of the drawer (FIG. 4) will now cause the cam areas **42** to contact the inclined surfaces **21**, and due to the attitude of the lever **37**, this serves to stop further inward movement of the drawer. Again referring to FIG. 4, note that the dog **41** is now disposed directly above the slot **23**. The electrical connection devices at the rear of the drawer are now in immediate proximity and alignment with their counterparts at the rear of the cabinet and it is only necessary to now bring them into slide-fitting relationship.

To this end the lever or levers **37**, as the case may be, are manually rotated about their pins **38**, and this movement causes dog **41** to swing downwardly into the keeper slot **23** (FIG. 5), and then to bear against the forward wall of the slotted portion. As the lever **37** continues its upward swinging movement (FIG. 6), the pin **41** reacts against the keeper to move the drawer inwardly of the cabinet to further closed position. This movement is best indicated by comparing the different positions of the drawer head **14** with the cabinet front as shown in FIGS. 3–6. Final movement of the lever **37**, as progressively shown in FIGS. 7 and 8, brings the drawer head **14** into gasket compressing and tight engagement with the walls of the cabinet. As will be readily appreciated, the cam action developed by the lever device will create tremendous forces assuring proper interfitting of the electrical connecting parts of the drawer unit and the cabinet, and closure of the sealing device. As noted above, many installations to which this invention is applicable require gasket-like protection against moisture etc. and, consequently, it is not only necessary that the electrical parts be properly united, but that the gasket seals also be perfected. This requires the application of tremendous leverage forces. When the drawer is finally pried into its "home" position the lever **37** is engaged by the latch **32** located at the upper end of the handle **27** as will be explained hereinafter, and thenceforth cannot swing downwardly to release the drawer except under such circumstances and manipulation thereof as is hereinafter detailed.

It is to be noted that the handle assembly comprising the parts **27, 37** not only serves the conventional purpose of a drawer pull, but also prevents any unintended drawer movement or displacement whatsoever. As seen best in FIGS. 12 and 13, the lever holding latch structure is of compound nature, and will now be described in detail. The upper extension **33** of the handle leg **28** is vertically slotted, as shown in FIG. 16, and the walls **33** receive therebetween one end of the latch bar **32**, pivotally held therein by pin **34**. This bar **32**, forwardly of the ends of the walls **33**, is clevis shaped to provide arms **46—46** between which the body **47** of a secondary latch or trigger **48** is located. A pin **49** pivotally mounts the trigger **48** as shown in FIGS. 12 and 13, and includes a forwardly directed latching lug **51**, a rear stop shoulder **52** (FIG. 13) and a thumb pad **53**. The trigger latch **48** is yieldingly held in the relationship to primary latch bar **32** shown in FIGS. 3, 4, 12, by means of a spring-urged pin **54**, carried by the bar **32**. Withdrawal of the lug **51** from the position of FIG. 12 to that of FIG. 13 requires depressing the thumb tab **53** against the force of the spring pin **54**. A compression spring working against the rear end of the latch bar **32** exerts pressure yieldingly holding the latch bar in the position shown in FIG. 12.

As shown in FIGS. 12, 13, and 17, the forward or free ends **46** of the primary latch bar terminate in depending hooks **56**, being spaced apart by the body portion **47** of the trigger **48** therebetween. A latch release tab **57** is located to extend laterally from one of the arm portions **46** directly beneath the trigger release tab **53** (see FIG. 17). The upper end portion of the lever **37** includes an inwardly extending part **59**, across the vertical face of which is provided a groove **61**. Above this groove the part **59** is formed with an inclined strike surface **62**. The extreme end **63** of the lever arm **37** is formed with a vertical inwardly extending rib **64**. Behind the strike surface **62** the lever is formed with an upwardly opening groove **66**.

As previously explained, assuming that the drawer has been projected into the cabinet **12** to an extent such that the drawer supporting suspensions have been engaged

and the drawer is now movable inwardly toward its closed position, the lever **37** will now be disengaged from its parallel latched relation with the handle proper **27**, by releasing first the trigger and then the primary latch **32** from the upper end of the lever. Hence the lever is disengaged at its upper end from the handle and is permitted to swing downwardly into the position as shown in FIG. 3, wherein the cam area **42** contacts the under surface of leg **28***a* of the handle. The handle **27** may now be used for moving the drawer further inwardly, such as from the position of FIG. 3 to that of FIG. 4 whereat inward movement of the drawer is momentarily stopped by contact of the lever cam area **42** against the edge **21** of the keeper bar **17**. The parts are so arranged that at this point the electrical or other connectors, contacts, pins, plugs, etc., forming parts of the drawer contained unit, are now disposed in immediate proximity with their engageable counterparts carried by or formed in the rear wall of the cabinet. Typically, there may be several hundred such connection devices in conjunction with a drawer unit, and therefore any headlong or rapid forcing of the drawer into fully closed position could readily damage or otherwise prevent proper interrelation of the connection parts. Thus, from the stop point of FIG. 4, the remaining travel of the drawer into fully closed position must be slow and deliberate in order to assure correct "homing" of the module in the cabinet.

Following contact of the cam area **42** with the surface **21** of the cabinet mounted keeper **17** the lever **37** is raised, and in the course of being raised it first assumes a position such as shown in FIG. 5. It will be noted that the stop position in FIG. 4 shows the pin **41** as being disposed directly above the slot **23** in the keeper. As the lever is moved as to the position of FIG. 5, the pin **41** swings downwardly and forwardly into the slot **23** and engages the forward wall thereof. Referring now to FIG. 6, then as the lever **37** is pivotally moved further upwardly and into closer association with the handle **27**, the pin **41** operates to force the drawer to move further inwardly of the cabinet. The progress of the drawer relative to the cabinet is depicted in FIGS. 5, 6, 7, 9 whereupon pin **41** has now reached its forwardmost position and final lever movement to bring the drawer front **14** into full closing relation with the cabinet front. At this point, all electrical connections or the like between unit and the cabinet will have been completed, and the gasket device tightly compressed therebetween.

Attention is now directed to the operations of the latch parts during movement of the lever, as described hereinabove, and for this purpose reference is made to FIGS. 7, 8, and 9, and to the detailed sectional showings of FIGS. 12 and 13. The strike portion **62** of the lever **37** (FIG. 7) first makes contact with the hooks **56**, and the incline of the strike surface causes latch bar **32** to swing upwardly about its pivot pin **34**; and, as still further movement of the lever takes place, the inner edge of the strike contacts and depresses lug **51** of the trigger **48** (FIG. 8). Thus space is provided between the hooks **56** and lug **51** to receive the entire strike therebetween. When the strike enters this area, spring **55** urges the bar **32** to pivot in clockwise direction, causing the hooks **56** to enter the groove **66**. Thus, the primary latch engages the lever to hold it in the position shown in FIGS. 9, 12. Since the trigger **48** is carried by latch bar **32**, lug **51** also swings into position beneath the strike into the groove **61** in response to the force of spring-pin **54**. Thus the strike of the lever **37** is jointly gripped at opposite edges by the hooks **56** and the lug **51**. Note that as shown in FIGS. 7, 12, when the latch parts are released the step end portion **52** of the secondary latch **48** abuts the top surface of the main latch **32**, thereby holding the lug portion **51** of the secondary latch in proper alignment with the groove **61** of the lever for automatic engagement of the latch parts when the lever is pushed "home." As shown for example in FIG. 9 the latch parts are shaped to provide sufficient clearances between the parts, so that when the lever is pushed "home" the latch parts fall easily in locking position.

As best seen in FIGS. 9, 12, it is to be noted that the vertical rib **64** on the lever **37** fits between the hooks **56—56** of the latch bar **32**. This interfitting of these parts prevents any inadvertent lateral thrusts on the lever from unlatching it from the handle. Also, the arrangement of the hooks **56—56** prevents separation of the lever from the primary latch by any direct outward pulls thereon, and any upward or downward relative movements of the latch are prevented by the engagement between the lug **51** of the trigger **48** with the grooved portion **61** of the lever. Thus it will be understood that short of breaking of the parts of the latch and lever and handle assembly, the drawer may not be released from the cabinet keeper without first manually releasing the latch **32** and swinging the lever **37** from the position of FIG. 9 to that of FIG. 4. The present invention thus takes into consideration the need, not only for assuring securement of the drawer in closed position, but also for preventing inadvertent release and withdrawal thereof.

In order to manipulate the latch **32** to release the lever **37** the following procedure is necessary, attention being directed to FIGS. 10 and 11. The tab **53** carried by the trigger **48** is first pressed downwardly to rotate the trigger and withdraw the lug **51** from the groove **61**. This so disengages the strike **62** as to enable the operator to exert a thumb and finger squeeze pressure between the upper tab **53** and the lower tab **57**, and then to swing the latch bar upwardly and away from the lever as shown for example in FIGS. 11, 13. The trigger and latch control members, being spring-urged, will return to their normal relative positions shown in FIGS. 3 and 12, when the manual pressures are released. When the latch **32** is released as above described the gaskets (or other sealing devices) will be released to exert an opening pressure on the drawer. The drawer movement as a result of this pressure will cause the lever **37** to swing forwardly into the position suggested in FIG. 14. The frictionally interfitted connection parts of the unit and cabinet are still sufficiently engaged as to prevent any more than an initial movement of the drawer wherein the cam areas **42** of the lever engage the lower portions of the inclined edges **21** of the keeper **17** (FIG. 14). To fully release the electrical and/or other connectors, and to enable withdrawal of the drawer, the lever is now manually swung downwardly, whereupon the cam areas **42** ride upwardly on the keeper edges **21**, and by so doing force the drawer outwardly of the cabinet to such extent as to fully separate all connections between the drawer unit and the cabinet. The handle proper **27** is now utilized to pull the drawer further outwardly on its suspension mechanism. Prior to lifting the drawer away from its suspension, the lever **37** is preferably swung back up into latched connection with the handle member **27**, whereupon a mechanicaly reinforced "double" handle device is available for gripping and carrying the drawer in vertically hanging attitude therefrom, as explained hereinabove.

It will of course be understood that whereas only one specific form of the invention has been illustrated and described in detail herein, various changes may be made therein without departing from the spirit of the invention or the scope of the following claims:

I claim:

1. A combination carrying handle and latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said storage device having a keeper extending forwardly therefrom and including a forward facing abutment and a hook portion forwardly spaced therefrom, said mechanism comprising,

a fixed handle for permanent attachment to the front of said drawer,

a lever shaped generally to complement the front profile shape of said handle and pivotally connected at one end thereof to one end of said handle,

said lever terminating in a cam portion extending endwise beyond the position of the pivotal connection of said lever to said handle, and having a dog portion extending laterally from said cam portion, the parts being so dimensioned and arranged that when said lever is pivoted to its "open" position said cam portion moves into alignment with said keeper abutment and the pivotal interconnection of said lever and handle whereby to act as a stop against full insertion of said drawer into said storage device with said dog portion disposed in registry with said hook portion of said keeper whereby manual pivoting of said lever will thereupon simultaneously shift said cam portion out of interfering relation with said keeper abutment while driving said dog portion into said keeper hook portion and reacting thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its other end with first, second and third nose portions providing hook land surfaces disposed in three dimensionally transverse plane relationships,

a main latch carried by said handle and spring-biased to engage said first and second nose portions of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said handle and said drawer in said storage device,

a second latch carried by said first latch and spring-biased to engage said third nose portion of said lever when the latter is in "closed" position, thereby locking said main latch against accidental disengagement from said lever,

and finger tab means extending from said main and second latches for manual release thereof whereby said lever may be disengaged from said handle by initial release of said second latch and then release of said main latch whereupon said lever may be pivoted to its "open" position causing said cam portion to react against said keeper abutment portion to pry said drawer out of its fully inserted position and to free it for withdrawal from said storage device.

2. A combination carrying handle and latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said mechanism comprising,

a keeper extending forwardly from said storage device and including a forward facing abutment and a hook portion forwardly spaced therefrom,

a fixed handle for permanent attachment to the front of said drawer,

a lever pivotally connected at one end thereof to one end of said handle,

said lever terminating in a cam portion extending endwise adjacent the position of the pivotal connection of said lever to said handle, and having a dog portion extending laterally from said cam portion,

the parts being so dimensioned and arranged that when said lever is pivoted to its "open" position said cam portion moves into alignment with said keeper abutment and the pivotal interconnection of said lever and handle whereby to act as a stop against full insertion of said drawer into said storage device with said dog portion disposed in registry with said hook portion of said keeper,

whereby manual pivoting of said lever will thereupon simultaneously shift said cam portion out of interfering relation with said keeper abutment while driving said dog portion into said keeper hook portion and reacting it thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its other end with first, second and third nose portions providing hook land surfaces disposed in three dimensionally transverse plane relationships,

a main latch carried by said handle and spring-biased to simultaneously engage said first and second nose portions of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said handle and said drawer in said storage device,

and a second latch carried by said first latch and spring-biased to engage said third nose portion of said lever when the latter is in "closed" position, thereby locking said main latch against accidental disengagement from said lever,

whereby said lever may be disengaged from said handle by manual release consecutively of said second and first latches and then pivoted to its "open" position whereupon said cam portion reacts against said keeper abutment portion to pry said drawer from its fully inserted position and to free it for withdrawal from said storage device.

3. A combination carrying handle and latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said storage device having a keeper extending forwardly therefrom and including a forward facing abutment and a hook portion forwardly spaced therefrom, said mechanism comprising,

a fixed handle for permanent attachment to the front of said drawer,

a lever shaped generally to complement the front profile shape of said handle and pivotally connected at one end thereof to one end of said handle,

said lever having a dog portion extending laterally therefrom, the parts being so dimensioned and arranged that when said lever is pivoted to its "closed" position said dog portion is driven into said keeper hook portion and reacts thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its other end with first, second and third nose portions providing hook land surfaces disposed in three dimensionally transverse plane relationships,

a main latch carried by said handle and spring-biased to simultaneously engage said first and second nose portions of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said handle and said drawer in said storage device,

a second latch carried by said first latch and spring-biased to engage said third nose portion of said lever when the latter is in "closed" position, thereby locking said main latch against accidental disengagement from said lever,

and finger tab means extending from said main and second latches for manual release thereof whereby said lever may be disengaged from said handle and then pivoted to its "open" position to free said drawer for withdrawal from said storage device.

4. A combination carrying handle and latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said storage device having a keeper extending forwardly therefrom and including a forward facing abutment and a hook portion forwardly spaced therefrom, said mechanism comprising,

a fixed handle for permanent attachment to the front of said drawer,

a lever shaped generally to complement the front profile shape of said handle and pivotally connected at one end thereof to one end of said handle,

said lever terminating in a cam portion extending endwise beyond the position of the pivotal connection of said lever to said handle, and having a dog portion extending laterally from said cam portion, the parts being so dimensioned and arranged that when said lever is pivoted to its "open" position said cam portion moves into alignment with said keeper abut-

ment and the pivotal interconnection of said lever and handle whereby to act as a stop against full insertion of said drawer into said storage device with said dog portion disposed in registry with said hook portion of said keeper whereby manual pivoting of said lever will thereupon simultaneously shift said cam portion out of interfering relation with said keeper abutment while driving said dog portion into said keeper hook portion and reacting thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its other end with hook means,

a first latch means carried by said handle and spring-biased to engage said hook means of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said handle and said drawer in said storage device,

and a second latch carried by said first latch means and spring-biased to engage said lever when the latter is in "closed" position, thereby locking said first latch against accidental disengagement from said lever whereby said lever may be disengaged from said handle by release of said latches and pivoted to its "open" position whereupon said cam portion reacts against said keeper abutment portion to pry said drawer from its fully inserted position and to free it for withdrawal from said storage device.

5. A combination handle and latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said storage device having a keeper extending forwardly therefrom and including an abutment portion and a hook portion, said mechanism comprising,

a fixed handle for permanent attachment to the front of said drawer,

a lever shaped generally to complement the front profile shape of said handle and pivotally connected at one end thereof to one end of said handle for alternate pivoting movements between "closed" or handle-parallel and laterally extending or "open" positions,

said lever having an eccentric dog portion extending therefrom and the parts being so dimensioned and arranged that when said lever is pivoted from its "open" position to its "closed" position said dog portion will enter said keeper hook portion and react thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its free end with a latch nose portion providing first, second and third keeper surfaces disposed in three transverse plane relationships,

a main latch carried by said handle and spring-biased to simultaneously engage said first and second keeper surfaces of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said handle and said drawer in said storage device,

and a second latch carried by said first latch and spring-biased to engage said third keeper surface of said lever when the latter is in "closed" position, thereby locking said main latch against accidental disengagement from said lever, said latches being manually releaseable whereby said lever may be disengaged from said handle and then pivoted to its "open" position to free said drawer for withdrawal from said storage device.

6. A latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said storage device having a keeper extending forwardly therefrom and including a forward facing abutment and a hook portion forwardly spaced therefrom, said mechanism comprising,

a lever pivotally connected at one end thereof to said drawer,

said lever having a dog portion extending laterally therefrom, the parts being so dimensioned and arranged that when said lever is pivoted to its "closed" position said dog portion is driven into said keeper hook portion and reacts thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its other end with first, second and third nose portions providing hook land surfaces disposed in three dimensionally transverse plane relationships,

a main latch pivotally carried by said drawer and spring-biased to simultaneously engage said first and second nose portions of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said drawer in said storage device,

a second latch carried by said first latch and spring-biased to engage said third nose portion of said lever when the latter is in "closed" position, thereby locking said main latch against accidental disengagement from said lever,

and finger tab means extending from said main and second latches for manual release thereof whereby said lever may be disengaged from said drawer and then pivoted to its "open" position to free said drawer for withdrawal from said storage device.

7. A latching mechanism for a drawer adapted to be inserted in a storage device of the rack or cabinet type, said storage device having a keeper extending forwardly therefrom and including a forward facing abutment and a hook portion forwardly spaced therefrom, said mechanism comprising,

a lever pivotally connected at one end thereof to said drawer,

said lever terminating in a cam portion extending endwise beyond the position of the pivotal connection of said lever to said drawer, and having a dog portion extending laterally from said cam portion, the parts being so dimensioned and arranged that when said lever is pivoted to its "open" position said cam portion moves into alignment with said keeper abutment and the pivotal interconnection of said lever and drawer whereby to act as a stop against full insertion of said drawer into said storage device with said dog portion disposed in registry with said hook portion of said keeper whereby manual pivoting of said lever will thereupon simultaneously shift said cam portion out of interfering relation with said keeper abutment while driving said dog portion into said keeper hook portion and reacting thereagainst to pry said drawer firmly into fully inserted position in said storage device,

said lever being formed at its other end with hook means,

a first latch means carried by said drawer and spring-biased to engage said hook means of said lever when the latter is manually pivoted into its "closed" position, thereby locking said lever to said drawer and said drawer in said storage device,

and a second latch carried by said first latch means and spring-biased to engage said lever when the latter is in "closed" position, thereby locking said first latch against accidental disengagement from said lever whereby said lever may be disengaged from said drawer by release of said latches and pivoted to its "open" position whereupon said cam portion reacts against said keeper abutment portion to pry said drawer from its fully inserted position and to free it for withdrawal from said storage device.

References Cited by the Examiner

UNITED STATES PATENTS

2,544,314	3/1951	Hebbel	200—50
3,140,905	7/1964	Trotter et al.	312—320

CLAUDE A. LE ROY, *Primary Examiner*..

FRANK B. SHERRY, *Examiner*.

F. DOMOTOR, *Assistant Examiner*.