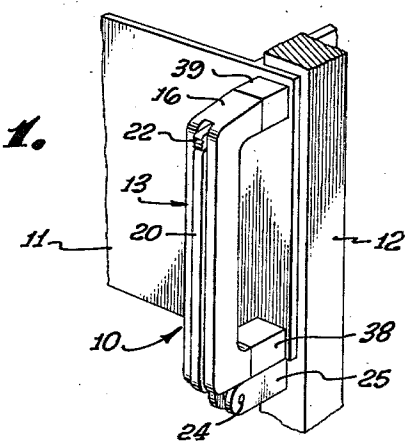
July 6, 1965 B. S. SAUTER 3,193,342

LATCH HANDLE

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FIG. 1.



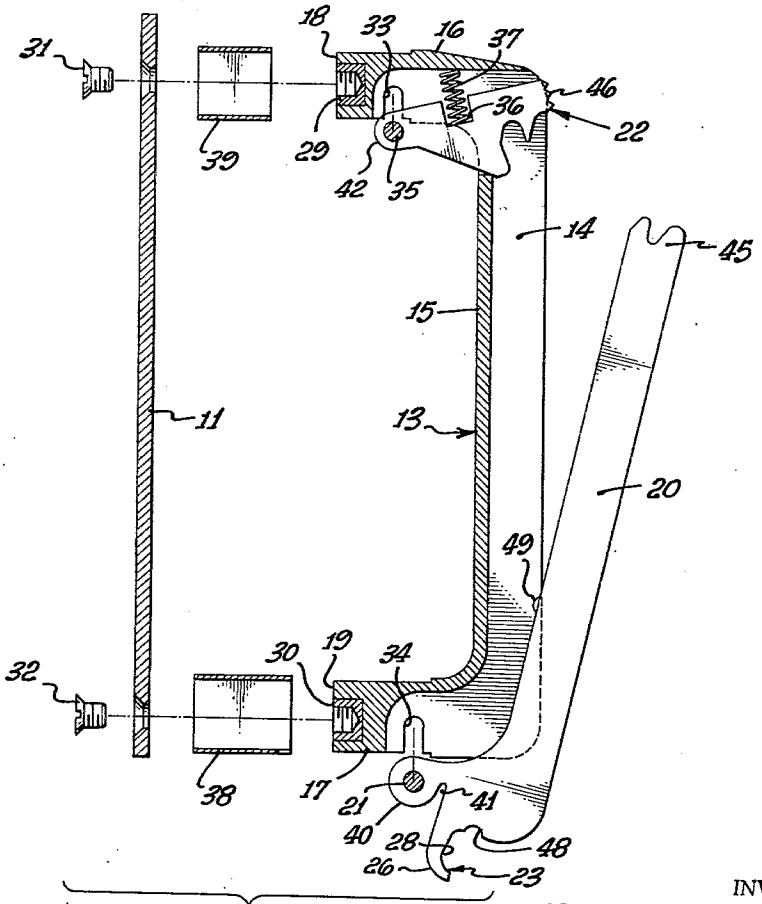


FIG. 6.

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LATCH HANDLE

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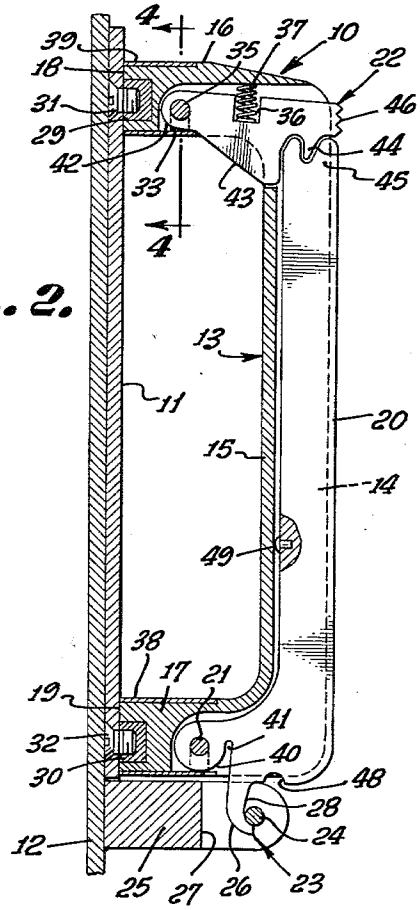


FIG. 2.

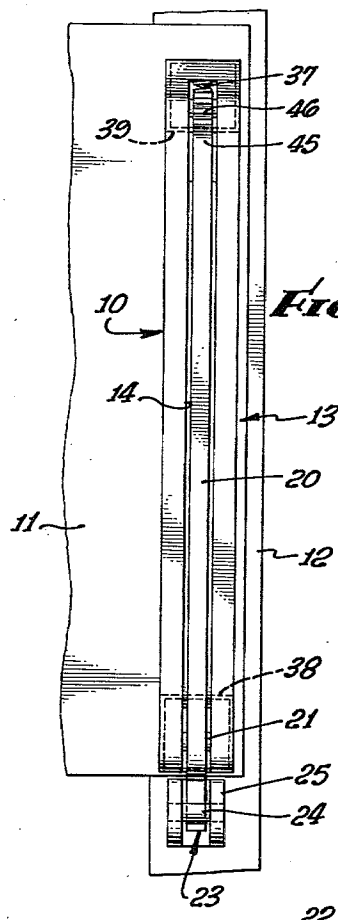


FIG. 3.

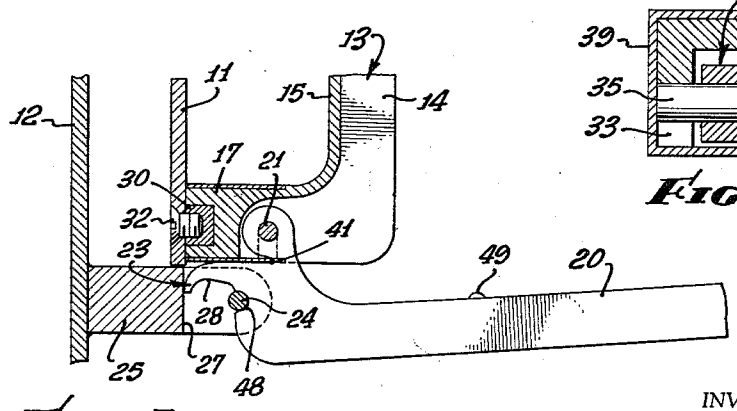


FIG. 5.

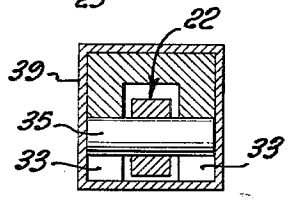


FIG. 4.

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LATCH HANDLE

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Filed May 27, 1963, Ser. No. 283,329
7 Claims. (Cl. 312—320)

This invention pertains to a handle that includes a latching element so that it may be used to lock one member to another, as well as to serve the conventional purpose of a handle.

Latching handles have come into widespread use in association with items such as removable drawers or modular units of electronic component assemblies. These latching devices generally include a pivotal lever associated with a handle, the lever having an end projecting beyond the handle which is adapted to engage a detent for locking the separable unit in place. The end of the lever also is provided with cam surfaces for facilitating both installation and removal of the item with which it is associated.

One of the principal advantages of the present invention is its simplicity and low cost, while at the same time it is of rugged and reliable construction. Assembly time in the manufacture of the invention is cut to a minimum by the type of design employed. The invention also has the advantage of being easily repairable, contrasted with the usual latch handle where the assembly is permanent and the entire unit must be discarded if any component is damaged or worn. An additional provision is included to prevent inadvertent rotation of the lever when the device with which it is associated is being pushed into place, thereby enhancing the performance of the latching handle.

These improvements are accomplished through a structure in which the handle unit has slotted ends adapted to receive the mounting pins of the movable portions of the device. The slots are covered and the pivot pins are retained by means of sleeves that are pressed onto the ends of the handle and held by a friction fit.

An object of this invention is to provide a low cost latching handle device.

Another object of this invention is to provide a latching handle that can be repaired without difficulty.

A further object of this invention is to provide a simplified assembly procedure for constructing latch handles by a minimum of labor by relatively unskilled personnel.

An additional object of this invention is to provide a latching handle in which the lever will not rotate upon use of the device until manually manipulated.

These and other objects will become apparent from the following detailed description taken in connection with the accompanying drawing in which:

FIGURE 1 is a perspective view of the latching handle of the invention associated with the parts being secured,

FIGURE 2 is an enlarged longitudinal sectional view of the handle in the closed position,

FIGURE 3 is an end elevational view of the arrangement of FIGURE 2,

FIGURE 4 is an enlarged fragmentary sectional view taken along line 4—4 of FIGURE 2,

FIGURE 5 is a fragmentary sectional view illustrating the handle in the released position, and

FIGURE 6 is an exploded view of the components of the latching handle of this invention.

With reference to the drawing, the latching handle **10** of this invention is adapted to secure a movable element such as a drawer **11** to a fixed frame or cabinet **12**. The handle assembly includes a substantially U-shaped body **13** provided with a longitudinally extending slot **14** in the

elongated central portion **15**. This slot extends into the end legs **16** and **17**, but stops short of their outer edges **18** and **19**. The slot **14** is adapted to receive an elongated lever **20** which is pivotal about the axis of a pin **21** at the lower end of the lever. This pin projects transversely outward on either side of the lever. A locking member **22** at the upper end of the handle serves to hold the lever **20** within the slot **14**. With the lever in this position (seen in FIGURES 1 and 3) the hook end **23** of lever **20**, which projects beyond the pivotal mounting pin **21**, engages a pin **24** on the keeper **25** which is carried by the fixed frame **12**. This prevents the handle and its associated member **11** from moving away from the fixed element **12**.

Upon release of the detent **22** and moving of the lever **20** downwardly to the position of FIGURE 5, the hook end **23** releases the pin **24** so that the handle and member **11** may be separated from the fixed frame **12**. As this movement takes place the arcuate outer surface **26** of the end **23** engages the adjacent wall **27** of the keeper **25**, acting as a cam to pry the movable member **11** away from the fixed frame **12**. Hence, there is both a releasing of the handle and a moving of the unit outwardly as the lever **20** is moved to the open position.

Return to the separable member **11** to the fixed unit **12** essentially is a reversal of the releasing procedure. The member **11** is slid inwardly to the position of FIGURE 5. Then upon rotation of the lever **20** upwardly into the slot **14** the inner surface **28** of the end **23** of the lever engages the pin **24** of the keeper **25**, and acts as a second cam for moving the member **11** to the position of FIGURE 2.

Thus, the end **23** performs three functions. It holds the members **11** and **12** together when the lever is in the retracted position within the slot **14**. Secondly, when the member **11** is to be removed from the fixed portion **12** the outer surface of the end **23** forms a cam that prys the separable unit away from the fixed member. Lastly, when the components are to be reassembled the end **23** has a further surface that acts as a second cam in drawing the elements together to their contacting position.

In keeping with the simplified construction of the device of this invention, and in effecting its manufacture at a minimum cost, the handle portions **13** may be constructed of molded plastic. At the ends **18** and **19** of outer legs **16** and **17** are placed threaded inserts **29** and **30**. These may be secured to the handle body **13** in the molding process. This avoids the necessity of drilling and tapping holes to receive the screws **31** and **32** which are used in holding the body **13** of the handle to the member **11**.

Formed in the end legs **16** and **17** are transverse slots **33** and **34** that communicate with the end portions of the longitudinal slot **14**. The slot **34** receives the pivot pin **21** of the lever **20**. In a similar manner, the pin **35** of detent **22** fits into slot **33**. The detent **22** is provided with a notch **36** in its upper surface in which is inserted a small compression spring **37**.

In assembling the lever **20** to the body **13** of the unit, therefore, the pin **21** is dropped into the slot **34**. After this sleeve **38** is fitted over the end leg **17**. Consequently, the sleeve **38** retains the pin **21** in the slot **34** which secures the lever **20** to the body **13**.

The attachment of the detent **22** is generally the same, by inserting the pin **35** into the slot **33**. The compression spring **37** will be fitted into the notch **36** prior to this time. Sleeve **39** over leg **16** holds the pin **35** in place so that the detent is retained to the handle body **13**.

Preferably the end legs **16** and **17** are square in cross section, and the sleeves **38** and **39** may constitute lengths of square tubing. The sleeves fit on to the end legs

by a force fit and are frictionally retained in place. Thus, assembly of the unit is accomplished without riveting or the attaching of conventional fasteners. The parts merely drop into place and with the sleeves slipped over the ends of the handle the unit is complete. Practically no skill and little equipment are required in accomplishing the assembly, which is an operation performed in only a few moments of time.

The manner of assembly also makes it possible to repair the unit in the event of damage or wear of the parts. It can be disassembled merely by pulling the sleeves **38** and **39** off of the end sections of the handle **13**. Then the needed components can be replaced and the unit put back together as before.

Despite the simple nature of the device of this invention and the ease with which it is assembled it operates fully as satisfactory as any prior latching handle designs. It may be noted that the lever **20** adjacent the pin **21** includes an arcuate exterior surface **40** that is rotatable about the wall of the chamber defined by the end of the slot **14** and the inner surface of the sleeve **37**. Thus, even though lever is held by a pin that is received within a slot there is no excessive clearance at its pivotal mounting. And notch **41** adjacent this rounded surface provides clearance for the rotational movement of the lever despite the presence of the sleeve **37**. The outer surface **42** of the detent **22** is similar to the surface **40** of the lever in that it can provide a bearing surface during rotation of the detent, and takes up clearance at the pivotal mounting for the detent.

The detent **22** can be moved simply by pushing upwardly on the surface **43** that extends across the inner corner of the handle and projects beyond the wall of the handle body **13**. This makes it easy to effect disengagement of the lock **44** of the detent from the bifurcated end **45** of the lever that receives it. Additionally, if desired, the outer edge **46** of the detent may be serrated as illustrated so that the detent can be operated either from the exterior or the interior of the handle.

When the two parts being secured are slid together the outer surface **26** of the end **23** of the lever will be brought into contact with the wall **27** of the keeper as seen in FIGURE 5. This has a tendency to cause an undesired rotation of the lever **20** toward the closed position without actual manipulation of the lever. Such pivotal movement is prevented in the design of this invention by the inclusion of a notch **48** adjacent the inner cam surface **28** of the lever end. This notch initially engages the keeper pin **24** when the parts are moved toward each other. When the pin **24** in the slot **48** inadvertent rotation of the lever cannot take place. Of course, subsequently when the lever is grasped and moved upwardly the pin **24** is moved out of the notch **48**. The closing of the lever may be cushioned by providing a resilient bumper **49** on the inner wall of the lever.

From the foregoing it may be seen that I have provided a latching handle produced by a simplified assembly process which nevertheless achieves a design of superior performanee. All of the component parts are easily made and the device can be repaired if this is necessary.

The foregoing detailed description is to be clearly understood as given by way of illustration and example only, the spirit and scope of this invention being limited solely by the appended claims.

I claim:

1. A latching handle comprising
a substantially U-shaped member adapted for attachment at its outer ends to an object,
said member having a duality of notches therein,
a pin in each of said notches,
a lever pivotal about the axis of one of said pins, said lever having a portion projecting beyond said U-shaped member for engagement with an adjacent object
for securing an object associated with said U-shaped member to said adjacent object,
detent means pivotal about the axis of the other of said pins
for releasably holding said lever adjacent said U-shaped member,
and a sleeve extending over each of said notches for retaining the pin therein.

2. A latching handle comprising
a substantially U-shaped member adapted for attachment at its outer ends to a movable object,
said member being provided with a transversely extending slot adjacent either end thereof, and having a longitudinally extending slot interconnecting said transversely extending slots,
a lever adapted to fit within said longitudinally extending slot,
a pin in one of said transversely extending slots,
said lever being pivotally mounted about the axis of said pin,
said lever having a projection extending beyond said U-shaped member for engaging an adjacent object
for securing said U-shaped member to said adjacent object,
a spring-pressed locking member for holding said lever in said longitudinally extending slot,
a second pin in the other of said transversely extending slots,
said locking member being pivotally mounted about the axis of said second pin,
said locking member being adapted for engagement with end portions of said lever
for releasably holding said lever in said longitudinaly extending slot,
and a sleeve extending over either end of said U-shaped member,
each sleeve extending over the transversely extending notch in the end portion with which it is associated.

3. A latching handle device comprising
a substantially U-shaped body member,
having two outer legs interconnected by a central portion,
said body member having a longitudinal slot extending from a location adjacent and inwardly of the outer end of the first outer leg thereof to a location adjacent and inwardly of the outer end of the second outer leg thereof,
said outer ends of said outer legs being adapted for connection to a movable object,
said body having a first transverse recess extending inwardly from one side of said first outer leg and communicating with said slot,
and a second transverse recess extending inwardly from one side of said second outer leg and communicating with said slot,
a lever receivable in said slot,
a first transverse pin at one end portion of said lever,
said first transverse pin extending into said first transverse recess,
said lever having a hook extension projecting beyond said first transverse pin and outwardly of said body for engagement with an adjacent relatively stationary object,
a locking member engageable with said lever for securing said lever within said slot,
resilient means biasing said locking member toward said lever,
a second transverse pin at one end portion of said locking member,
said second transverse pin extending into said second transverse recess,
and a sleeve means on either of said outer legs extending over the transverse recess therein

for retaining said transverse pins in said recesses.

4. A device as recited in claim 3 in which
said one side of said first outer leg is the side remote from said second outer leg,
and said one side of said second outer leg is the side adjacent said first outer leg.

5. A device as recited in claim 3 in which
said sleeve means are frictionally retained on said outer legs.

6. A device as recited in claim 3 including
a threaded insert in the outer end of either of said outer legs
for receiving screws for securing said body to a movable object.

7. A device as recited in claim 3 in which
said locking member is provided with a recess in one side thereof,

and said resilient means comprises a coil spring one end of which is received in said recess in said locking member, and the other end of which bears against said body member in said longitudinal slot for thereby biasing said locking member toward said lever.

References Cited by the Examiner

UNITED STATES PATENTS

2,609,268	9/52	Nye	312—320
2,926,056	2/60	Newcomer et al.	312—320
3,011,851	12/61	Verga et al.	312—320
3,111,338	11/63	Kimble	312—320 X

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