Dec. 14, 1965 A. G. BODOH ETAL 3,222,899

CABINET LOCK

Filed Oct. 5, 1962 3 Sheets-Sheet 1

FIG. 1

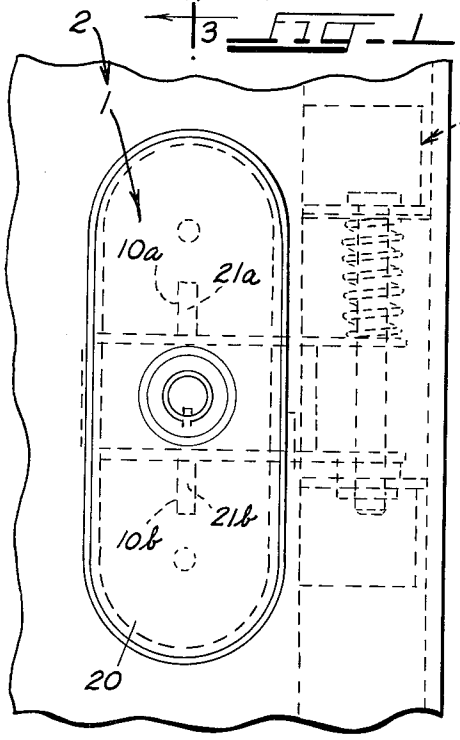

FIG. 2

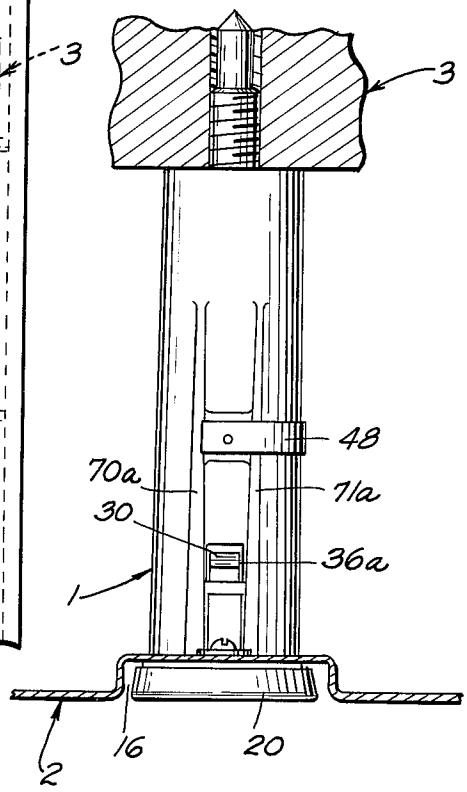

FIG. 3

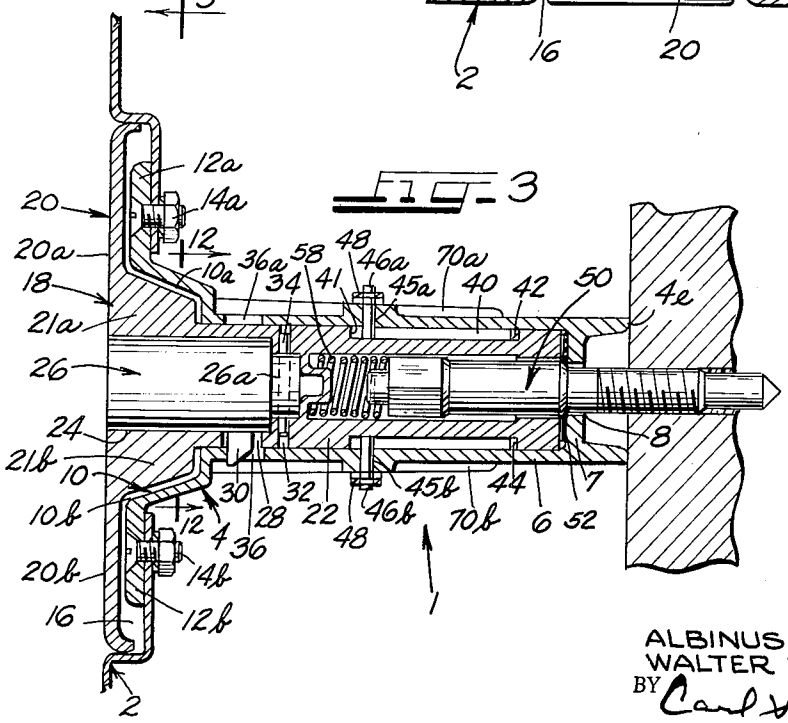

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FIG. 4

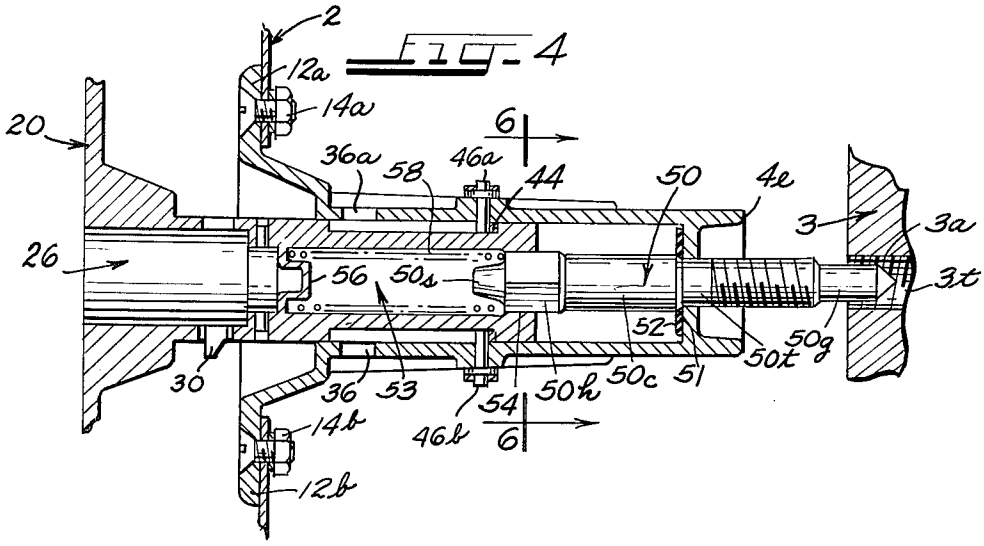


FIG. 5

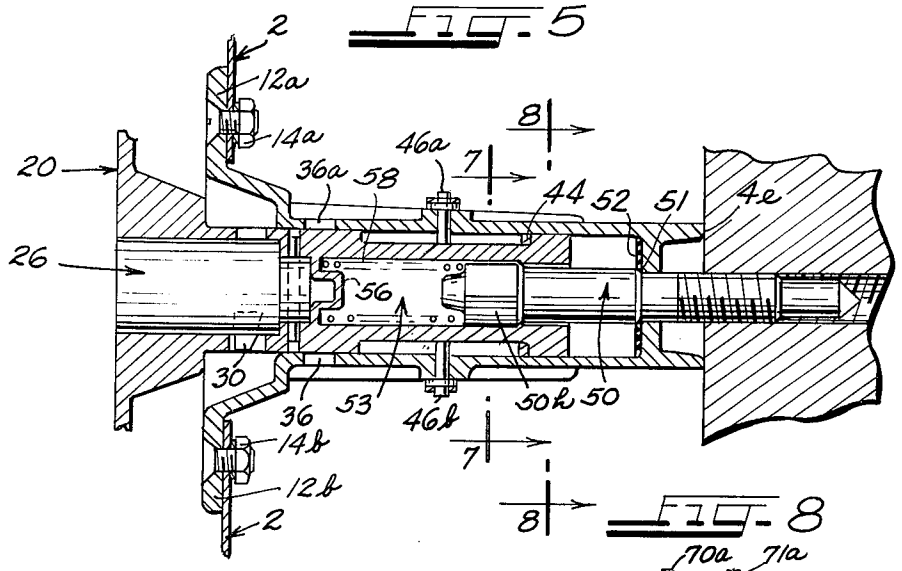


FIG. 8

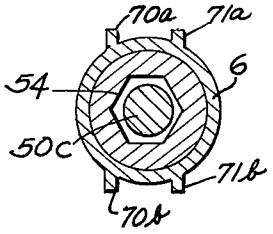


FIG. 6

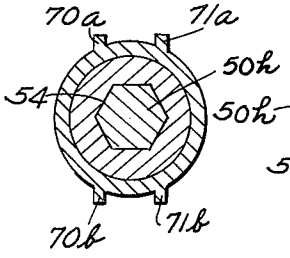
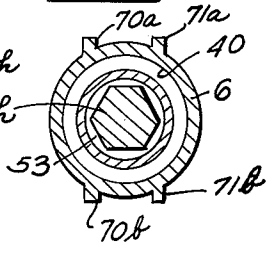


FIG. 7



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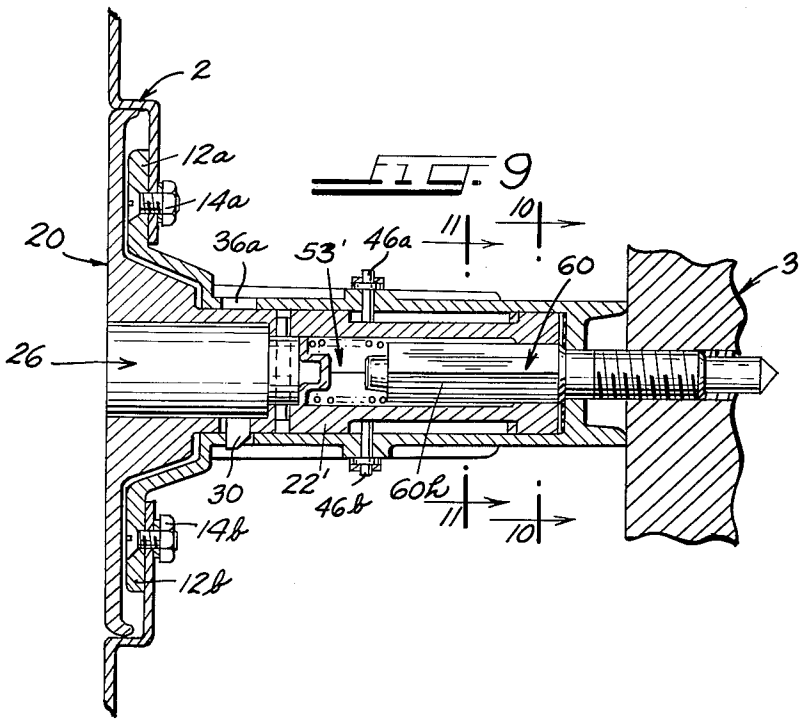


FIG. 9

FIG. 10

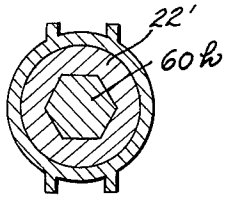


FIG. 11

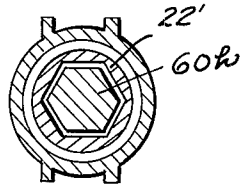
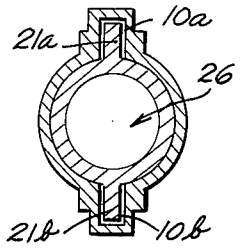


FIG. 12



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United States Patent Office 3,222,899 Patented Dec. 14, 1965

3,222,899

CABINET LOCK

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Filed Oct. 5, 1962, Ser. No. 228,594
13 Claims. (Cl. 70—140)

This invention relates to a cabinet lock and more particularly to a lock of the type wherein a lock bolt on the door of a cabinet is received in a retaining nut on the cabinet frame.

In certain instances, it is particularly desirable to join a movable cabinet door to its stationary cabinet frame by a lock system which exposes a minimum number of parts of the lock and which insures a positive and firm hold. For example, locks for vending machine cabinets generally require such specifications. A system now in use for accomplishing these results in vending machine cabinets is predicated upon the co-action of a lock bolt member in the door and a retaining nut in the frame. A conventional key lock is positioned in a lock aperture so as to obscure the lock bolt, and, when the key lock is removed, a crank member is inserted in the aperture for loosening and tightening the lock bolt in order to open or close the cabinet as desired. However, this system is undesirable in that the key lock must be completely removed, and a separate and independent crank element must be utilized each time the lock is operated. Thus, a service man for a vending machine must be provided not only with a key to unlock the key lock but with a crank for loosening the lock bolt as well, and also the service man must take special care not to misplace or damage the key lock after he removes it and sets it aside for insertion of the crank.

Among other advantages this invention obviates the aforementioned difficulties by providing a novel lock assembly having a crank member as an integral component of the lock. The crank, which houses a conventional lock key, is in the form of a lock handle which is spring loaded for partial telescopic ejection from the lock aperture whereby the desired rotation of the lock bolt may be effected. The lock handle is provided with flange members adapted to be received in a recessed surface of the cabinet door whereby a flush neat-looking appearance is imparted to the closed cabinet. Moreover, in the preferred embodiment of the invention, means are provided for a free-floating disengagement of the lock handle crank and the bolt such that the lock handle can be rotated to a position of alignment for its flush recess retention without loosening the previously tightened bolt. Further, the lock bolt itself is mounted in the lock housing for one-way axial displacement, as required, such that a non-jamming structure is achieved and such that damage to the lock bolt upon closure of the cabinet is effectively obviated.

Accordingly, it is a primary object of this invention to provide a lock assembly of the lock bolt-retaining nut type which is simple to operate and which insures a positive and firm hold for a cabinet closure.

In a more specific sense, it is an object of this invention to provide such a lock assembly predicated upon an integral crank component in the form of a lock handle such that opening of the lock assembly is achieved by insertion of an appropriate key and by merely turning the lock handle as it is spring ejected from the lock aperture.

It is also an object of the invention to provide resiliently free-floating interengagements for the various components so that proper alignment of the components may be achieved for a flush closure of the lock assembly.

A related object is to provide a free-floating axially displaceable lock bolt for non-jamming operation of the lock assembly.

These and other objects, advantages, and features of the subject invention will hereinafter appear, and, for purposes of illustration but not of limitation, exemplary embodiments of the subject invention are shown in the appended drawings, in which:

FIGURE 1 is a front view of a flush-mounted lock assembly produced in accordance with this invention;

FIGURE 2 is a top plan view of the lock assembly;

FIGURE 3 is a sectional view taken along the line 3—3 of FIGURE 1, showing the lock in a closed bolt-tightened position;

FIGURE 4 is a view similar to FIGURE 3 showing the lock in an opened bolt-loosened position;

FIGURE 5 is also a view similar to FIGURE 3, showing the position of the lock assembly in its free-floating bolt-tightened position;

FIGURE 6 is a sectional view taken along the line 6—6 of FIGURE 4;

FIGURE 7 is a sectional view taken along the line 7—7 of FIGURE 5;

FIGURE 8 is a view taken along the line 8—8 of FIGURE 5;

FIGURE 9 is a view similar to FIGURE 3 of an alternate embodiment of the invention without the free-floating feature;

FIGURE 10 is a sectional view taken along the line 10—10 of FIGURE 9;

FIGURE 11 is a sectional view taken along the line 11—11 of FIGURE 9; and

FIGURE 12 is a sectional view taken along the line 12—12 of FIGURE 3.

With reference to the drawings, FIGURES 1 and 2 show a lock assembly **1** flush mounted in a cabinet door **2** which is secured to the cabinet frame **3**. The lock assembly **1** comprises a housing **4** defined by the generally cylindrical portion **6** and the oppositely disposed flange portions **12***a* and **12***b*. The cylindrical portion **6** is provided with a disc-shaped closure portion **7** adjacent its interior end. A circular aperture **8** is centrally aligned in the disc portion **7**. The housing **4** is also provided with an opening **10** adjacent its exterior or door-side, which opening **10** is provided with the slots **10***a* and **10***b* (see FIGURES 1 and 12). The flange portions **12***a* and **12***b* of the housing **4** are received in an indented recess **16** in the door **2**. Screws **14***a* and **14***b* position the flanges **12***a* and **12***b* respectively in the said recess.

A lock handle **18** comprising the handle portion **20** and a cylindrical extension **22** is telescopically received in the interior of the housing **4**. The handle portion **20** comprises the flange means **20***a* and **20***b* which serve for rotating the lock handle **18** and which are received in the recess **16** respectively overlapping the flange portions **12***a* and **12***b* of the housing **4** when the lock assembly **1** is locked, as shown in FIGURE 3. Web portions **21***a* and **21***b*, which extend on opposite sides from the cylindrical portion **22** and the respective flange means **20***a* and **20***b*, are received in the slots **10***a* and **10***b* of the housing **4** when the lock assembly **1** is locked, as best seen in FIGURE 12.

The handle portion **20** and the outer extremity of the cylindrical portion **22** are provided with a recess **24** for reception of a conventional key lock element **26**. A slot **28** is provided through the lock handle **18** such that the spring-loaded protrusion lug **30** of the key lock **26** may extend therethrough. An aperture **32** is provided through the lock handle **18** and a retaining pin **34** extends through the aperture **32** and through an inwardly extending reduced portion **26***a* of the key lock **26** so as to retain the key lock **26** within the recess **24** of the lock handle **18**. Apertures **36** and **36***a* are provided on opposite sides of the housing **4** for alignment with the protruding lug **30**.

The cylindrical portion **22** of the lock handle **18** is

provided with an annular recess 40 defining the exterior shoulder 41 and the interior shoulder 42. A resilient washer 44 is positioned in the recess 40 adjacent the interior shoulder 42. Stop pins 46*a* and 46*b* extend respectively through oppositely disposed apertures 45*a* and 45*b* in the cylindrical portion 6 of the housing 4. The stop pins 46*a* and 46*b* extend into the annular recess 40 so as to limit the axial displacement of the lock handle 18 relative to the housing 4. A spring clip 48, which is placed about the exterior of the housing 4 (best seen in FIGURE 2), retains the stop pins 46*a* and 46*b* in the described positions. Ribs 70*a* and 71*a* on one side and corresponding ribs 70*b* and 71*b* on the other side are provided on the exterior of the housing 4 as integral bracing elements for the housing 4, which may conveniently be a one-piece cast element.

The cylindrical portion 22 of the lock handle 18 is also provided with a cylindrical interior chamber 53 which terminates in the hexagonal throat portion 54 (see FIGURE 6). A lock bolt 50 is adapted for operative engagement with the chamber 53 and its hexagonal throat portion 54. The lock bolt 50 comprises a hexagonal head portion 50*h*, a reduced diameter central portion 50*c*, a further reduced diameter threaded portion 50*t*, and a further reduced diameter guide portion 50*g*. A stud portion 50*s* also extends from the head portion 50*h*. The shoulder 51 is defined between the central portion 50*c* and the threaded portion 50*t* of the lock bolt 50.

The lock bolt 50 is mounted in the lock assembly 1 in the following fashion: The threaded portion 50*t* extends through the aperture 8 in the disc portion 7 of the housing 4 such that the shoulder 51 is contiguous with a washer 52 which is positioned within the housing 4 adjacent the interior side of the disc portion 7. The diameter of the central portion 50*c* is larger than the diameter of the aperture 8 (see FIGURE 5) but is smaller than the minimum diametrical distance across the throat portion 54 of the cylindrical extension 22 (see FIGURE 8). The hexagonal portion 50*h* of the lock bolt 50 mates with and may be flush received within the throat portion 54 (see FIGURE 6), but the maximum diametrical distance across the head portion 50*h* is smaller than the diameter of the cylindrical interior chamber 53 (see FIGURE 7).

A stud portion 56 is provided on the extreme closed end of the interior chamber 53, and a spring 58 is positioned in the chamber 53 by encirclement of its respective open ends about the stud portion 56 of the cylindrical extension 22 and the stud portion 50*s* of the lock bolt 50. In this manner, relative axial displacement of the lock handle 18 and the lock bolt 50 may be achieved by appropriate compression of the spring 58, that is, as the spring 58 is compressed, the head portion 50*h* of the lock bolt 50 is received within the interior of the chamber 53 of the lock handle 18 while the hexagonal throat portion 54 of the lock handle 18 encompasses the central portion 50*c* of the lock bolt 50 (see FIGURES 3, 5, 7, and 8), while expansion of the spring 58 tends to force the lock bolt 50 axially away from the lock handle 18 such that the hexagonal head portion 50*h* of the lock bolt 50 is flush received within the hexagonal throat portion 54 of the lock handle 18 (see FIGURES 4 and 6).

It is important to note that relative axial displacement of the lock handle 18 and the lock bolt 50 may be effected either by displacement of the lock handle 18 relative to a fixed relative disposition of the lock bolt 50 and the housing 4 or by displacement of the lock bolt 50 relative to a fixed relative disposition of the lock handle 18 and the housing 4, for purposes hereinafter described.

The respective components of the lock assembly 1 are appropriately dimensioned such that the maximum expansion of the spring 58 is limited by the co-action of the stop pins 46*a* and 46*b* with the washer 44 contained

in the annular recess 40 (see FIGURE 4), and such that the maximum compression of the spring 58 is defined by the maximum insertion of the lock handle 18 within the housing 4 such that the cylindrical extension 22 of the lock handle 18 is contiguous with the washer 52 positioned adjacent the interior of the disc portion 7 of the housing 4 (see FIGURE 3). An intermediary degree of compression of the spring 58, between the two positions defined, is illustrated in FIGURE 5.

The cabinet frame 3 is provided with a suitable aperture 3*a* having a threaded portion 3*t* adapted to co-act with the threaded portion 50*t* of the lock bolt 50. The aperture 3*a* is co-axially aligned with the central axis of the lock assembly 1 when the cabinet door 2 is placed in a closed position. The guide portion 50*g* of the lock bolt 50 is first received in the aperture 3*a* (as in FIGURE 4) so as to insure positive interengagement of the threaded portions 50*t* of the lock bolt 50 and 3*t* of the aperture 3*a*.

The operation of the lock assembly 1 is as follows: When the device is in the locked position shown in FIGURE 3, the lock bolt 50 is threaded into a retaining nut defined by the threaded portion 3*t* of the aperture 3*a*. The lock handle 18 is compressed against the spring 58 and is retained in the flush mounted position shown by virtue of the protrusion of the lug 30 into the aperture 36 of the housing 4. In this locked position, the door 2 is securely adhered to the cabinet frame 3, and the lock handle 18 presents a smooth, flush surface appearance on the exterior of the door 2 (see FIGURES 1–3).

When an appropriate key is inserted into the conventional key lock 26, the protruding lug 30 can be withdrawn from the aperture 36, and expansion of the spring 58 will then urge the lock handle 18 to the left through the intermediary position shown in FIGURE 5. As previously described, the lock assembly 1 is dimensioned such that the spring 58 will urge the lock handle 18 to its furthest left hand position (as shown in FIGURE 4) such that the washer 44 positioned in the recess 40 bears against the stop pins 46*a* and 46*b*. While the lock handle is in the intermediary position shown in FIGURE 5, the lug 30 will be retained in its withdrawn position into the key lock 26, until the impediment of the housing 4 is passed, as in FIGURE 4, such that the lug 30 is then free to pop out.

When the lock assembly 1 is in the maximum expansion position shown in FIGURE 4, the throat portion 54 of the lock handle 18 embraces the head portion 50*h* of the lock bolt 50, and the lock handle 18 may then be rotated so as to rotate the lock bolt 50 in order to withdraw it from the aperture 3*a*. Thus, the lock handle 18 serves as an integral crank component when urged by the spring 58 to its bolt-rotating operative position. Once the lock bolt 50 has been sufficiently rotated so as to withdraw it from the aperture 2*a*, the door 2 may be moved relative to the cabinet frame 3 as desired.

In order to re-lock the lock assembly 1 the reverse sequence of operations is performed. Thus, the door 2 is moved adjacent the cabinet frame 3 such that the guide portion 50*g* of the lock bolt 50 is received within the aperture 3*a* of the cabinet frame 3. The co-action of the lock bolt 50 and the cabinet frame 3 will tend to force the lock bolt 50 toward the extended lock handle 18 against the force of the spring 58. This displacement of the lock bolt 50 relative to a fixed relative disposition of the lock handle 18 and the housing 4 is an important feature of the invention, since damage to or jamming of the lock bolt 50 are thereby obviated. For instance, if the door 2 is slammed against the cabinet frame 3, the lock bolt 50 will absorb the shock by axial displacement inwardly of the chamber 53 against the force of the spring 58 by virtue of the one-way axially displaceable mounting of the lock bolt 50 in the hous-

ing 4 from its normal position wherein the shoulder 51 of the lock bolt 50 bears against the housing 4 via the washer 52.

When, however, the end 4*e* of the housing 4 is positioned adjacent the frame 3 in a static fashion such that the lock bolt 50 is aligned for registry with the aperture 3*a*, the lock bolt 50 will be urged by the spring 58 into the aperture 3*a* such that a manual rotatively directed pressure may be exerted on the lock handle 18 so as to engage the threaded portion 50*t* of the lock bolt 50 with the threated portion 3*t* of the aperture 3*a*. The lock handle 18 may then be rotated in an appropriate direction so as to urge the lock bolt 50 and thus the entire lock assembly 1 into locked engagement with the cabinet frame 3. The free-floating disengagement feature of the subject invention is then utilized in the following manner: The lock handle 18 is telescopically compressed against the spring 58 to the intermediary position shown in FIGURE 5. Since the throat portion 54 of the lock handle 18 has now cleared the hexagonal head portion 50*h* of the lock bolt 50, the lock handle 18 may be rotated without disturbing the relative dispositions of the housing 4 and the lock bolt 50 vis-a-vis the cabinet frame 3. The lock handle 18 is rotated in this free-floating condition until the web portions 21*a* and 21*b* are aligned with the corresponding slots 10*a* and 10*b* of the housing 4. The lock handle 18 is then further compressed into the housing 4, as the web portions 21*a* and 21*b* are received in the aligned and mating slots 10*a* and 10*b*, until the lug 30 of the key lock 26 is adjacent either of the apertures 36 or 36*a* in the housing 4. At this point, of course, the spring loaded lug 30 pops out into engagement within the appropriate aligned aperture so as to securely lock the lock handle 18 in the flush mounted spring-compressed position, such as is shown in FIGURE 3.

An alternate embodiment of the invention is illustrated in FIGURES 9–11. This embodiment, which lacks the previously described free-floating disengagement feature, differs from the previous embodiment in the modification of the interior chamber 53′ of the cylindrical extension 22′ to a hexagonal configuration and in the substitution of the lock bolt 60 for the lock bolt 50 as previously described. In all other respects, this embodiment is substantially the same as that previously described, and like reference characters are utilized to identify corresponding parts.

In this embodiment, the reduced diameter central portion of the lock bolt is eliminated, and the hexagonal head portion is extended in place thereof, as represented by the reference character 60*h* for the hexagonal head portion of the lock bolt 60. By virtue of the substitution of the lock bolt 60, the hexagonal throat portion 54 of the lock handle 18 will cooperate with the hexagonal head portion 60*h* of the lock bolt 60 in all assembled positions of axial displacement of the lock handle 18 relative to the lock bolt 60 and the housing 4. Thus, whenever the lock handle 18 is rotated, in either direction, the lock bolt 60 will be correspondingly rotated. Since free-floating rotation of the lock handle 18 relative to the lock bolt 60 is not utilized, the interior chamber 53′ of the lock handle 18 is provided with a hexagonal (rather than a circular) cross section configuration so as to enhance the structural strength of the cylindrical extension 22′ of the lock handle 18.

The operation of this structure will ordinarily not differ in any material respects from the operation previously described with respect to the lock assembly 1 provided with the free-floating disengagement feature. However, in some instances, it may be necessary to partially loosen the lock bolt 60 from its position of maximum tightness in order to align the web portions 21*a* and 21*b* of the lock handle 18 with the corresponding slots 10*a* and 10*b* of the housing 4 in order to telescopically compress the lock handle 18 into its locked flush-received position. It should be apparent that the lock assembly 1 previously described obviates this difficulty and for this reason is a preferred construction, since the lock handle 18 may be rotated to any desired position of angular orientation relative to the housing 4 without disturbing the angular and therefore the axial disposition of the lock bolt 50 relative to the cabinet frame 3. However, in either embodiment a free-floating one-way axially displaceable lock bolt is utilized, and all of the non-jamming and non-damage features thereof are obtained.

The provision of the end 4*e* of the housing 4 as an annular flange results in the attainment of a lateral stability for the cabinet door 2 vis-a-vis the cabinet frame 3 since the ring-shaped flange tends to prevent angular displacement of the axis of the housing 4 relative to the cabinet frame 3, such as would be occasioned by an attempted lateral displacement of the door 2 relative to the frame 3 (e.g., as by jiggling of the door 2). Furthermore, the end 4*e* provides a positively engaged stop means for assuring the proper alignment of the lock assembly 1 relative to the cabinet frame 3, that is, the adjacent contacting of the end 4*e* with the cabinet frame 3 defines an aligned position of maximum closure for the cabinet door 2.

The hexagonal configuration for the socket portion of the lock handle and for the lock bolt are of course merely exemplary. A practitioner in the art may readily devise other suitable mating configurations which will operate in the same fashion as herein described.

Also, the description herein of a threaded lock bolt member is exemplary, as it will be obvious to a practitioner in the art that the lock assembly of this invention may be provided with other conventional retaining systems such as an appropriate latch system operatively connected to the lock bolt member (in place of the threaded structure described) for co-action with suitable retaining means in the cabinet frame.

It should be understood that various changes and modifications may be made in the details of construction, arrangements, and operations of the various elements, without departing from the spirit and scope of the instant invention, as defined in the appended claims:

What is claimed is:

1. A lock for joining a door to a frame provided with retaining means comprising:
   - a housing fixed to the door;
   - stop means for positioning the housing relative to the frame;
   - a lock handle telescopically mounted in the housing for rotational and limited axial displacement relative thereto;
   - a socket in one end of the lock handle;
   - a lock bolt rotatively mounted in the housing for one-way axial displacement relative thereto, a portion of the said lock bolt being rotatively received in the socket;
   - clutch means associated with the socket of the lock handle for clutchingly engaging the lock bolt;
   - spring means in the socket for urging the lock handle away from the lock bolt toward a position wherein the clutch means engages the lock bolt;
   - means adapted for rotation of the lock handle so as to rotate the lock bolt relative to the retaining means of the frame when the clutch means engages the lock bolt; and
   - means for retaining the lock handle against the spring means in a position wherein the clutch means is disengaged from the lock bolt.

2. A cabinet lock adapted to be mounted in a movable cabinet door for co-action with a stationary cabinet frame provided with retaining nut means comprising:
   - a housing having a hollow cylindrical interior opened at its opposite ends;
   - means for retaining the housing in an aperture of the

door so as to align a first opened end of the housing with the aperture;

a lock handle telescopically and rotatively received in the interior of the housing through the first opened end thereof;

means retaining the lock handle in the housing for limited axial movement relative thereo;

a hollow chamber in the lock handle having a closed end adjacent the first opened end of the housing and having an opened end in alignment with the oppositely disposed second opened end of the housing;

a lock bolt received in the chamber of the lock handle through the aligned ends of the housing and the lock handle, the said lock bolt having a threaded portion for engaging the retaining nut means of the cabinet frame and having an enlarged diameter portion, the said threaded portion passing through the second opened end of the housing and the said enlarged diameter portion being impeded thereby;

a spring in the hollow chamber of the lock handle positioned between the closed end of the chamber and the lock bolt;

means on the interior of the hollow chamber for grasping the enlarged diameter portion of the lock bolt whereby the lock bolt may be threaded into and out of the retaining nut means of the cabinet frame by appropriate rotation of the lock handle; and

means for retaining the lock handle in the housing in a locked position wherein the spring is compressed between the lock handle and the lock bolt.

3. A cabinet lock as claimed in claim 2 wherein the lock handle is provided with flange means for the rotation thereof and wherein the said flange means are flush received in the aperture of the door when the lock handle is retained in the housing in a locked position.

4. A cabinet lock, as claimed in claim 2, wherein:

the enlarged diameter portion of the lock bolt includes a head portion having a maximum diameter greater then the maximum diameter of the remainder of the enlarged diameter portion of the lock bolt; and

the means on the interior of the hollow chamber for grasping the enlarged diameter portion of the lock bolt includes a reduced diameter throat portion, the cross section of the said throat portion being substantially the same as the cross section of the head portion of the lock bolt.

5. A locking device of the lock bolt-retaining nut type adapted for use in a cabinet door and having an integral crank element for tightening and loosening the lock bolt in the retaining nut, which comprises:

a housing adapted to be mounted on and positioned inwardly of the cabinet door;

a lock handle telescopically mounted for rotational and axial movement in the housing and having flange means at its door end for moving the lock handle,

the said flange means being flush received in a surface recess of the door when the locking device is in a locked position and including means for positioning the lock handle at a predetermined angular and axial relationship relative to the housing when the locking device is in a locked position;

a socket disposed on the opposite end of the lock handle and comprising a cylindrical chamber having a restricted throat portion;

a generally cylindrical lock bolt received in the housing for rotational and axial movement with respect thereto and comprising a first portion having a cross section corresponding to the internal configuration of the restricted throat portion, a second portion having a reduced diameter cross section, and a third portion having a screw threaded external configuration corresponding to the threaded internal configuration of the retaining nut,

the first portion of the lock bolt being received within the cylindrical chamber of the socket when the locking device is in a locked position;

spring means in the socket for urging the lock handle away from the lock bolt in order to align the first portion of the lock bolt and the restricted throat portion of the lock handle whereby rotation of the flange means of the lock handle rotates the lock bolt relative to the retaining nut; and

means for retaining the lock handle in the housing in a locked position.

6. A cabinet lock adapted to be mounted in a movable cabinet door for co-action with a stationary cabinet frame having retaining nut means comprising:

a housing having a hollow cylindrical interior opened at its opposite ends;

means for affixing the housing in a recessed aperture of the door so as to align one opened end of the housing with the aperture in the door;

a lock crank comprising a cylindrical portion telescopically and rotatively received in the interior of the housing through the one opened end and further comprising a handle portion having flange means adapted for flush reception in the recessed aperture of the door,

the said lock crank being provided with a hollow chamber having a closed end adjacent the first opened end of the housing, having an oppositely disposed opened end in alignment with the second opened end of the housing, and having a restricted throat portion adjacent the opened end of the chamber;

means retaining the lock crank in the housing for limited axial movement relative thereto;

a lock bolt provided with a head portion, a reduced diameter central portion, and a further reduced diameter threaded portion, the said lock bolt being rotatively mounted in the housing such that the head portion and the central portion are positioned in the cylindrical interior of the housing and such that the threaded portion extends exteriorly from the second opened end of the housing and being axially displaceable relative to the housing into the interior thereof;

a spring positioned in the chamber of the lock crank between the closed end of the hollow chamber and the lock bolt,

the spring normally urging axial displacement of the lock crank relative to the housing to an extreme position wherein the restricted throat portion of the lock crank embraces the head portion of the lock bolt such that the lock bolt may be rotated by rotation of the flange means of the lock crank, and

the lock crank being adapted for axial displacement from the said extreme position by compressing the spring to a position wherein the head portion of the lock bolt is received within the chamber of the lock crank and wherein the restricted throat portion of the lock crank encompasses the central portion of the lock bolt such that the lock crank may be rotated without affecting the disposition of the lock bolt; and

means for retaining the lock crank in the housing in a locked position wherein the flange means of the lock crank are flush-received in the recessed aperture of the door.

7. A cabinet lock as claimed in claim 6 wherein the head portion of the lock bolt and the restricted throat portion of the lock crank are provided with mating substantially identical cross-sectional configurations.

8. A cabinet lock as claimed in claim 7 wherein the said cross-sectional configurations are hexagonal.

9. A lock assembly for joining a door to a frame provided with a retaining means comprising:

a housing fixed to the door;

stop means for positioning the housing relative to the frame;

a lock handle mounted in the housing for rotational and limited axial displacement relative thereto;

socket means in the lock handle;

a lock bolt member rotatively mounted in the housing for limited axial displacement relative thereto;

clutch means associated with the socket means of the lock handle for clutchingly engaging the lock bolt member;

spring means for urging relative displacement of the lock handle and the lock bolt member toward a position wherein the clutch means engages the lock bolt member;

means adapted for rotation of the lock handle so as to rotate the lock bolt member relative to the retaining means of the frame when the clutch means engages the lock bolt member; and

means for retaining the lock handle in a position wherein the clutch means is disengaged from the lock bolt member.

10. A lock assembly for joining a door to a frame provided with retaining means comprising:

a housing fixed to the door;

a lock handle;

means mounting the lock handle in the housing for rotational and for limited axial displacement relative thereto;

a lock bolt member adapted for engagement with the retaining means of the frame;

means mounting the lock bolt member in the housing for rotational and limited axial displacement relative thereto;

spring means for urging relative displacement of the lock handle and the lock bolt member;

clutch means associated with the lock handle for clutchingly engaging the lock bolt member;

means adapted for rotation of the lock handle so as to rotate the lock bolt member into engagement with the retaining means of the frame; and

means for retaining the lock handle in a locked position when the lock bolt member is engaged with the retaining means of the frame,

whereby the lock bolt member may be axially displaced against the force of the spring means to absorb shock impact and whereby the lock handle may be axially displaced against the force of the spring means to disengage the clutch means from the lock bolt member.

11. A lock assembly as claimed in claim **10** and further comprising stop means for positioning the housing relative to the frame.

12. A lock assembly for joining a door to a frame provided with retaining means comprising:

a housing having an outwardly facing recess;

a lock handle member having a generally cylindrical hub portion slidably and rotatively received in the housing and a handle portion shaped conformably to the shape of the recess,

the said lock handle member being movable between a retracted position wherein the handle portion thereof is in an angular position of registry within the recess, and an extended position wherein the handle portion thereof is projected away from the housing and out of the recess;

a lock bolt member adapted for engagement with the retaining means of the frame,

the said lock bolt member being mounted in the housing for rotation with respect thereto and for axial displacement therein toward the lock handle member;

cooperating clutch means on the hub portion of the lock handle member and on the lock bolt member establishing a driving connection therebetween when the lock handle member is in its extended position, said last mentioned means providing for disengagement of the driving connection and for rotation of the lock handle member relative to the lock bolt member when the lock handle member is in its retracted position;

springs means normally urging the lock handle member toward its extended position; and

means for retaining the lock handle member in its retracted position when the lock bolt member is engaged with the retaining means of the frame.

13. A lock assembly as claimed in claim **12** in which said clutch means includes a socket in the hub portion of the lock handle member, the lock bolt member being received within the socket and having a portion thereof with an external configuration conforming to the internal configuration of a portion of the socket, such that the lock handle member and the lock bolt member are telescopically displaceable relative to each other.

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