

# United States Patent

Sanchez Giraldez

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## [54] TWO-PART LOCK BUTTON

[72] Inventor: **Jose Humberto Sanchez Giraldez**, Am Rathenau Park 3, D-2000, Hamburg, Germany

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[51] Int. Cl. .... **A44b 1/38, A44b 17/00**

[58] Field of Search ..... **24/108, 216, 217, 230 M; 292/251.5; 70/276, 413**

## [56] References Cited

### UNITED STATES PATENTS

1,427,614 8/1922 Menkin ..... **24/108**

2,486,003 10/1949 Christensen ..... **24/217 X**

## FOREIGN PATENTS OR APPLICATIONS

67,616 7/1892 Germany ..... **24/108**  
8,720 4/1897 Great Britain ..... **24/108**  
509,649 7/1939 Great Britain ..... **70/276**

Primary Examiner—Paul R. Gilliam

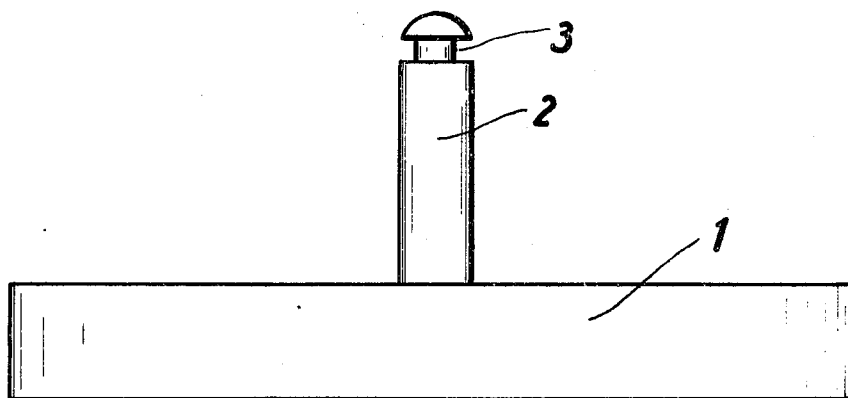
Attorney—McGlew and Toren

[57]

## ABSTRACT

A two-part lock button consists of a male and a female button half and the male part comprises a locking bolt member which is provided with one or several locking grooves and can be inserted into an opening in the female part. The female button half comprises one pair or several pairs of retaining discs which upon insertion of the male button half into the female button half will come into engagement with the one or several locking grooves of the male part thus firmly locking together these two parts. Release of the button halves can be effected by means of a mechanical or magnetic key.

**7 Claims, 14 Drawing Figures**



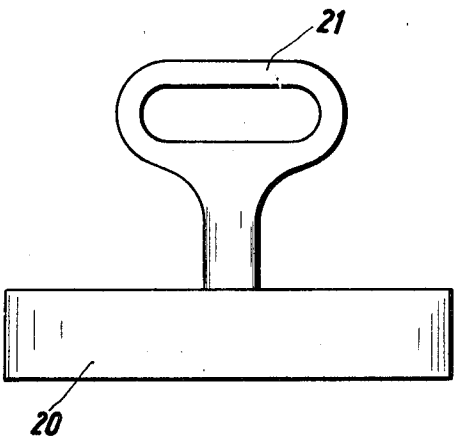


Fig. 4

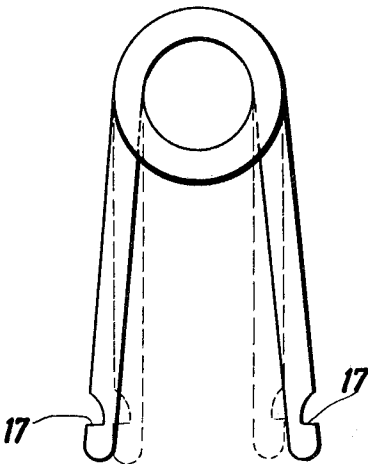


Fig. 3

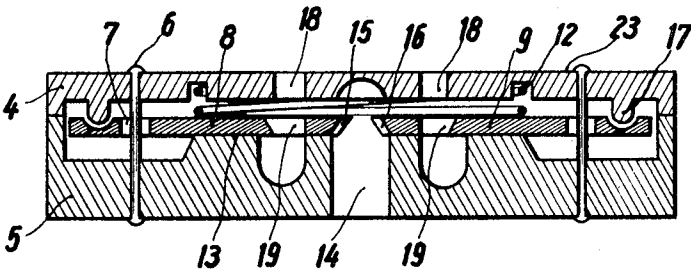


Fig. 2

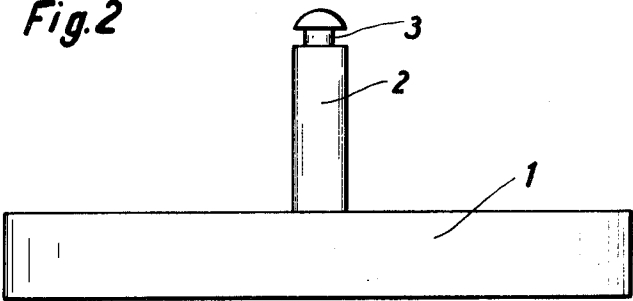


Fig. 1

Inventor:

JOSE HUMBERTO SANCHEZ GIRAQUE  
By: McFlem & Torrey

ATTORNEYS

Fig. 7

Fig. 5

Fig. 6

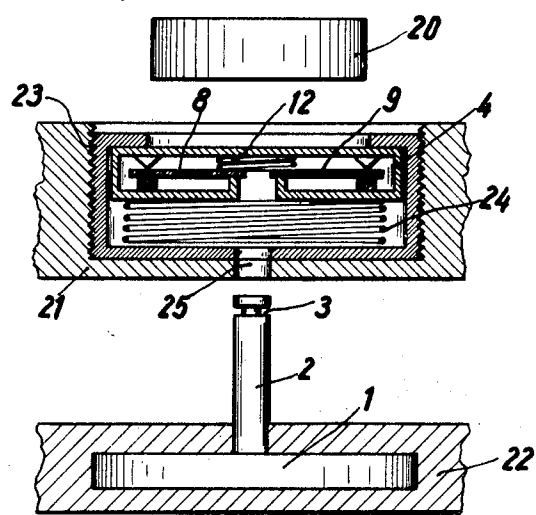
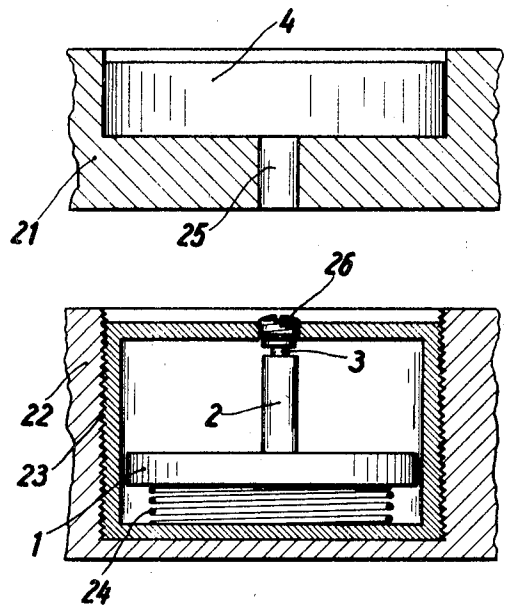


Fig. 8

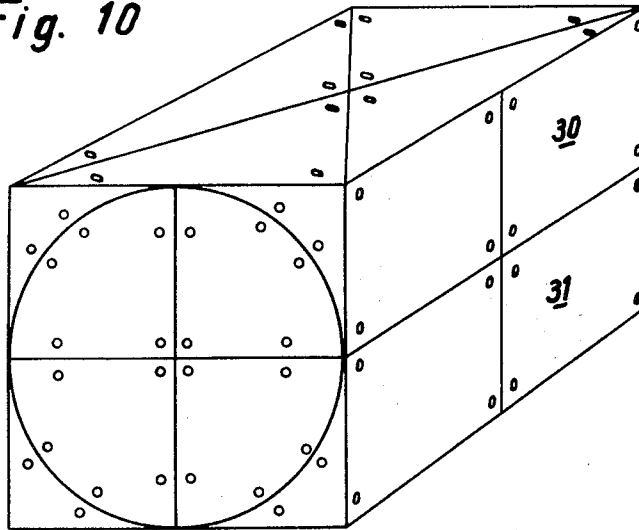
Fig. 9



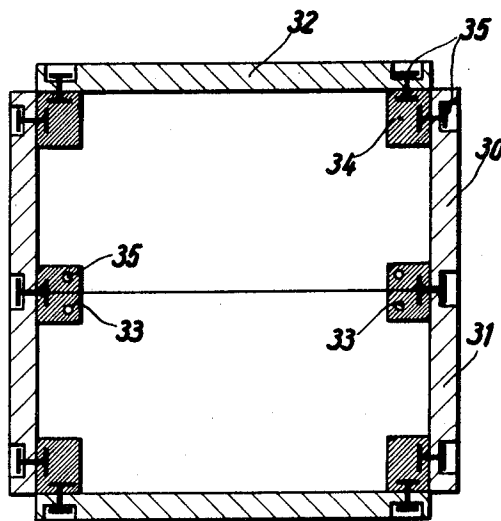
*Inventor:*

JOSE HUMBERTO SANCHEZ GIRALDEZ  
By: *McFlew & Torra*  
ATTORNEYS

*Fig. 10*



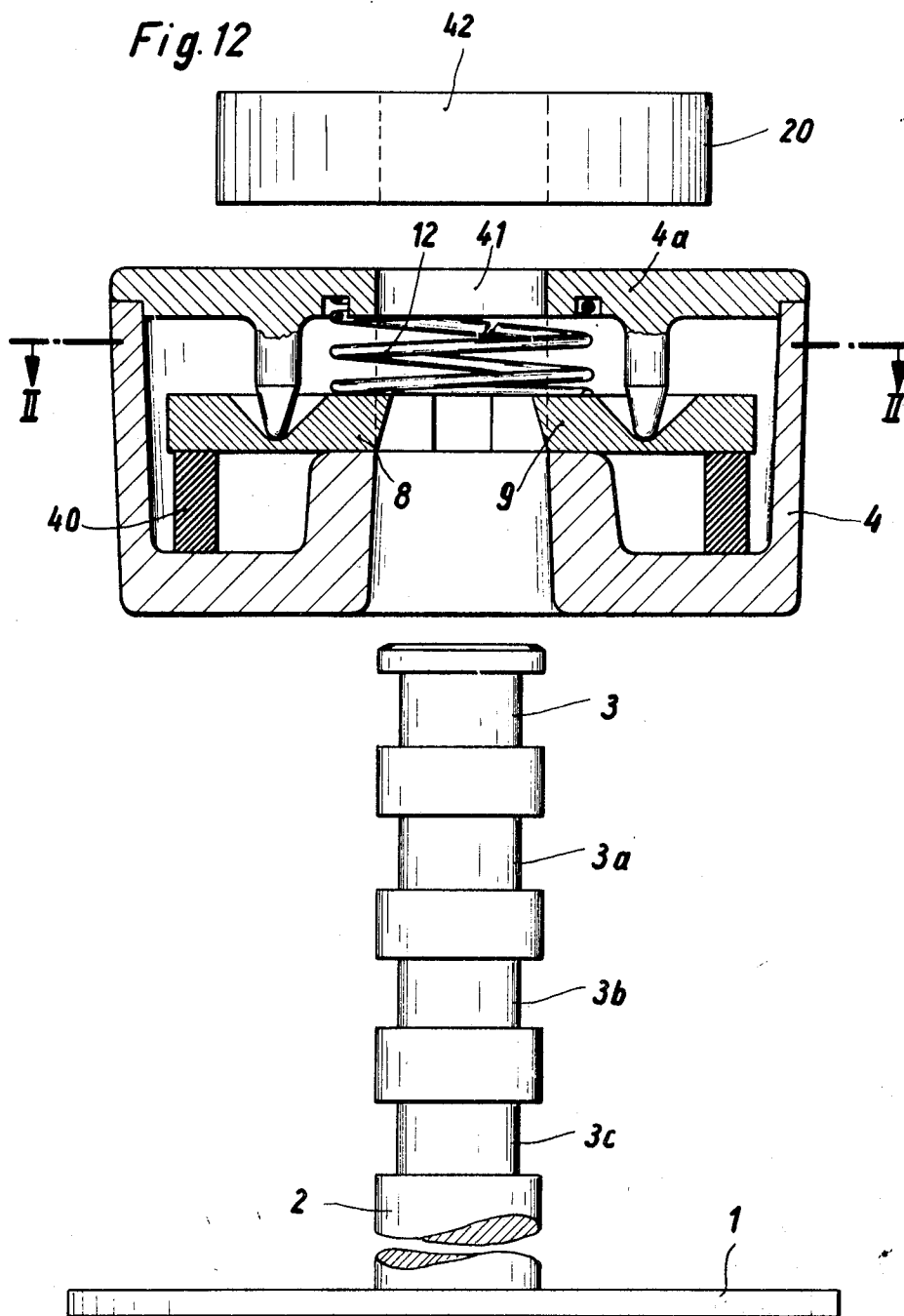
*Fig. 11*



*Inventor:*

JOSE HUMBERTO SANCHEZ GIRALDE

By: *McFlem & Torres*  
ATTORNEYS



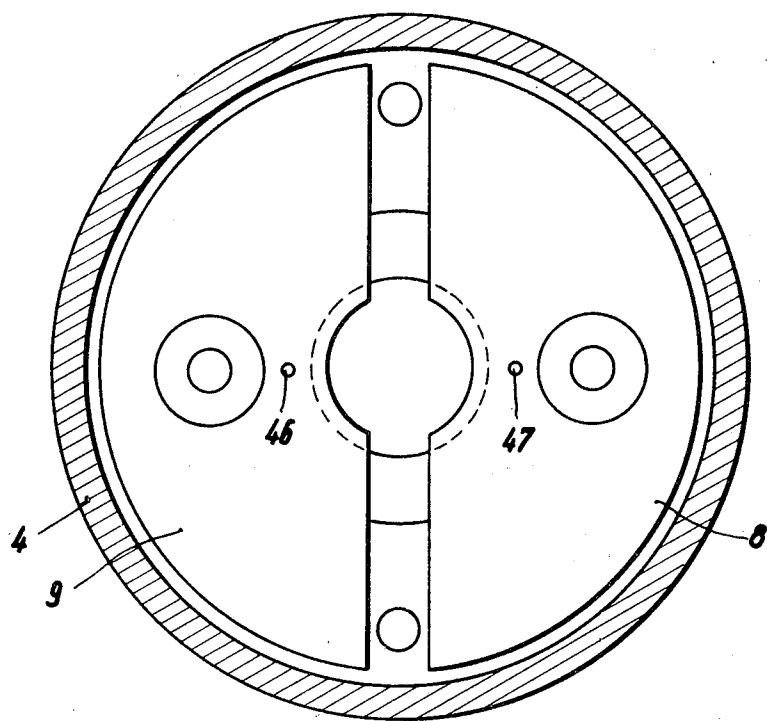
*Inventor:*

JOSE HUMBERTO SANCHEZ GRALDES

By: *McFlem & Torrey*

ATTORNEYS

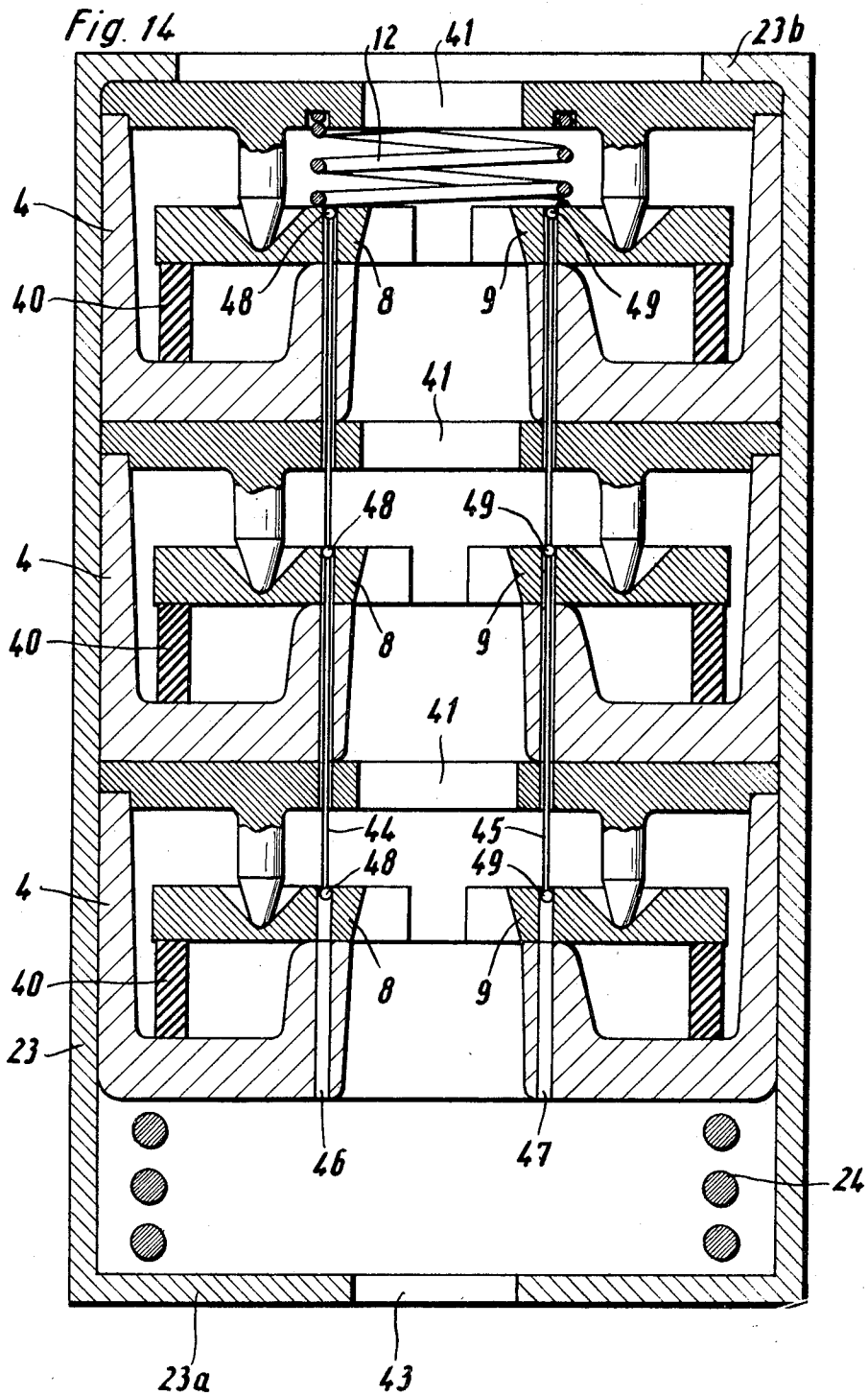
Fig. 13



*Inventor:*

JOSE HUBERTO SANCHEZ GRALDE

By: *McJannet & Torrey*  
ATTORNEYS



*Inventor:*

JOSE HUMBERTO SANCHEZ GONZALEZ  
 By: *McGraw & Tove*  
 ATTORNEYS

## TWO-PART LOCK BUTTON

This invention relates to a two-part lock button comprising a pair of preferably semicircular retaining disks arranged within a first button half in the shape of a casing whereby these retaining disks are adapted to engage a locking groove provided on a bolt of another button half which bolt is adapted to be centrally inserted into the first button half and the retaining disks are releasable from engagement with the locking groove by means of a key. Lock buttons of this type are employed for various purposes for which a fastening means consisting of two halves such as a press fastener is required which prevents an inadvertent or unauthorized disengagement of the two button halves.

In an already known two-part lock button of this type the two semicircular retaining disks are mounted slidably in opposite directions and vertically to the button axis in the casing of the one button half. Each of the retaining disks is exposed to one of two oppositely directed radial restoring forces provided by rubber abutments arranged between the circumference of each disk and the adjacent sidewall of the casing. By inserting a key having two parallel and rigidly connected bolts through openings in the casing of the one button half and through openings which are arranged in each of the two retaining disks behind these first-mentioned openings, the retaining disks may be wedged apart in opposite directions, thus disengaging these disks from the locking groove in the bolt of the other button half, allowing to withdraw the bolt carrying button half from the casing button half. Since with such an arrangement the key movement in the button axis must be translated into two oppositely directed movements of the retaining disks vertically to the button axis the force required for disengaging this known type of lock button is relatively large. For handling the button it is furthermore unfavorable that for disengaging the lock button a pressure must be exerted on the button in the direction of the button axis and simultaneously or immediately thereafter a pulling force must be applied in the same direction to the bolt carrying button half.

It is therefore a general object of the present invention to improve a two-part lock button of the above-mentioned type so that the force which must be applied to the retaining disks for disengaging the button may be directed in the direction of the button axis and opposite to the direction of the pulling force applied to the bolt carrying button half when pulling this bolt out of the casing in order to thus facilitate handling of the button, to reduce the force required and to provide the possibility of employing keys which operate according to differing principles.

The invention proposes to employ a key in the form of a resilient, two-legged hooked clamp having two leg portions provided with hooks which may be inserted through openings in the casing of the one button half and through retaining disk openings arranged behind these casing openings so that as a result of the resiliency of the hooked clamp these hook portions engage these retaining disks from their opposite sides and tilt these disks against the force of the return spring upon withdrawal of the hooked clamp.

Additionally or alternatively the key may be provided in the form of a magnetic plate bearing a handle whereby this magnetic plate is adapted to exert a force of attraction onto the retaining disks which are of a magnetic material when the magnetic plate key is brought into registration with a freely accessible plane surface provided on the casing of the first button half so as to tilt the retaining disks against the axially directed force of the return spring.

The invention furthermore proposes a particularly advantageous application of a two-part lock button of this type wherein the button serves as a coupling member between rigid bodies which may be elements of a collapsible model, a box, furniture or toys. Toward this purpose the two button halves are mounted in rigid bodies which may be coupled to each other in such a manner that the button half forming a casing for the retaining disks is accessible to the key at a surface located on the one body opposite to a surface forming the con-

tact surface of this one body with the other of these two rigid bodies and wherein the bolt provided at the other button half protrudes from the corresponding contact surface of the other body. This arrangement allows to simply assemble the two rigid bodies at their contact surfaces so that the protruding bolt penetrates into the opening of the other button half resulting in the engagement of the retaining disks with the locking groove of the bolt, thereby rigidly connecting the two bodies.

Another improvement provided by the present invention is that one of the two button halves is mounted in one of the rigid bodies and is guided therein for axial movement against the force of a spring arranged within a sleeve-shaped body. If this movably mounted button half is the casing-shaped button half then this will allow to not automatically effect the coupling by inserting the two rigid bodies but only by pushing the casing-shaped button half with a finger or by means of another determined effort towards the bolt. If the movable button half consists of the button carrying button half then it is possible to push the bolt in the decoupled condition into the rigid body which is provided with the button half carrying the bolt thus reducing the danger of injuries.

In a preferred embodiment according to a further proposal of the present invention one of the rigid bodies in which is mounted the button half forming a casing for the retaining disks comprises a wall portion of a collapsible hollow body whereas the other rigid body comprises a supporting or connecting element for two or several adjacent wall portions of the hollow body arranged on the interior of the hollow body.

According to a further feature of the invention the locking bolt of the second button half comprises several spaced locking grooves, the casing of the first button half is provided with an upper cover plate having an aperture and the magnetic key is centrally provided with an aperture, these apertures adapted for passing through the locking bolt of the second button half. This arrangement allows to firmly couple the two button halves since the button half with the retaining disks may be pushed so far into the other button half until the retaining disks engage one of the locking grooves of the locking bolt. This arrangement allows moreover connecting the two button halves if a larger clearance must be maintained between the two button halves. By selectively depressing the button half with the retaining disks into one of the several locking grooves on the locking bolt several different clearances may be accommodated without reducing the firmness of the lock connection.

A further improvement according to the present invention is that several button halves including retaining disks are arranged on top of each other in the form of a button half assembly, the button halves being jointly mounted in a guide sleeve for axial movement against the force of a spring which engages a bottom plate connected to the guide sleeve, the guide sleeve partially overlapping the upper of the button halves, and the bottom plate being provided with a central aperture for passing through the locking bolt of the second button half. In this arrangement the tiltably mounted locking disks are connected by means of guide rods mounted for axial movement in the casings of the button halves so that upon application of the key in the form of a magnet to the freely accessible back side of the casing-shaped button half the engagement may be released, i.e., the retaining disks of the upper button half may be moved out of the locking groove of the locking bolt on the other button half. This movement is transmitted to the retaining disks of the other button halves by means of the connecting rods thus allowing to separate the two parts.

In the following the invention will be described by means of several preferred embodiments which are shown in the accompanying drawings. Similar reference numerals in the various figures of the drawings are intended to indicate like or similar parts.

FIG. 1 is a lateral-elevational view of one button half comprising a plate and a bolt with a locking groove;



FIG. 2 is a vertical cross-sectional view of the corresponding other button half comprising the retaining disks;

FIG. 3 is a lateral-elevational view of a key in the form of a two-legged hooked clamp, the condition for inserting the key being shown in phantom lines;

FIG. 4 is a lateral-elevational view of another key in the form of a magnetic plate;

FIG. 5 is a cross-sectional view of a casing-shaped button half comprising the retaining disks whereby the button half is movably mounted in a sleeve arranged within a rigid body;

FIG. 6 shows a bolt carrying button half which is mounted in a rigid body;

FIG. 7 shows a key for unlocking the button half, the key having the form of a permanent magnet which is shaped like an annular disk or a circular cylinder;

FIG. 8 is an elevational view of the casing-shaped button half which is mounted in a rigid body;

FIG. 9 shows the bolt carrying button half mounted in a rigid body and slidable within a sleeve whereby sliding movement is prevented by a setscrew;

FIG. 10 illustrates an application of the invention to a box-shaped hollow body comprising a plurality of detachable wall portions into which are built-in lock buttons according to the invention, these lock buttons being held by supporting or connecting elements (not shown) provided with built-in button halves and arranged on the interior of the box;

FIG. 11 is a cross section through the box of FIG. 10 and shows schematically the attachment of the wall portions and the supporting or connecting elements by means of two-part lock buttons according to the invention;

FIG. 12 illustrates partly in cross section and partly in elevation a button half, together with a magnetic key arranged on top of the button half and another second button half arranged below the first-mentioned button half, as well as a locking bolt having several locking grooves;

FIG. 13 is a cross-sectional view along the line II—II of FIG. 12; and

FIG. 14 is a vertical cross-sectional view of several button halves including retaining disks and arranged on top of each other.

Referring to FIG. 1 the one button half comprises in a conventional manner a plate such as the circular plate 1 carrying a center locking bolt 2 having a locking groove 3.

The other button half comprises a two-shell casing 4, 5 and may likewise have the shape of a circular disk (FIG. 2). Reference numeral 6 indicates rivets by which the two casing shells are attached to each other. Alternatively the casing shells may also be bonded at their parting line. The rivets 6 penetrate with ample clearance into an opening 7 in the preferably semicircular retaining disks 8, 9. These retaining disks 8, 9 are tiltably mounted on stud-shaped bearings 10, 11 and are biased downwardly by a helical spring 12 acting in the direction of the button axis and urging the disks against an abutment 13 provided on the lower casing shell 5. The reference numeral 14 indicates a central opening for introducing the bolt 2 of the other button half 1. When inserting the bolt 2 into the central opening 14 the bolt 2 will at first engage the retaining edges 15, 16 of the retaining disks 8, 9 so that these disks will recede against the force of the spring 12 and then engage the locking groove 3 thus retaining the bolt 2.

As shown in FIG. 3 the key consists in this first embodiment of a resilient two-legged hooked clamp whereby each of the two legs of the clamp is provided with a hook 17 at its end portion and adapted to be inserted through openings 18 in the casing shell 4 of the one button half as well as through recesses 19 in the two retaining disks 8, 9 which recesses are aligned with the openings 18 of the casings 4 and located behind these latter openings so that as a result of the resiliency of the hooked clamp these hook portions engage the retaining disks on their opposite sides and tilt the disks 8, 9 against the force of the return spring 12 when withdrawing the hooked clamp. As may be readily seen, withdrawing the hooked clamp towards the one side and immediately thereafter or simultane-

ously pulling out the button half with the bolt 2 out of the opening 14 may be carried out more easily than disengaging the button halves of the above-described known lock button.

As shown in FIG. 4, the key may also be provided in the form of a magnetic plate 20 having a handle 21 instead of a key in the form of a hooked clamp. When this magnetic plate 20 is brought into registration with the plane surface 23 of the casing 4 of the one button half a force of attraction is exerted onto the retaining disks 8, 9 which are made of steel or any other suitable magnetic material. By this attraction force the retaining disks are tilted against the axially directed force of the return spring 12. The application of such a type of key is extremely simple and requires still less manual force for disengaging the lock button.

In FIGS. 5 and 6 are shown rigid solid bodies 21, 22 such as plates or bars in which a button half is built in respectively. The bodies 21, 22 may be of wood, plastic or any other rigid material into which other bodies may be embedded by screwing, a press fit or in any other manner. The reference numeral 23 indicates a sleeve-shaped body which is firmly embedded in one of the two rigid bodies and within which is mounted for movement against the force of a return spring 24 the one button half such as the button half 4 of FIG. 4 or the button half 1 of FIG. 9. This allows, for example, to join together the rigid bodies 21, 22 shown in FIGS. 5 and 6 so that the locking bolt 2 enters the opening 25 and the contact surfaces of the parts 21, 22 come into contact with each other without the retaining disks 8, 9 engaging the locking groove 3 on the bolt 2. This engagement will not be effected until a pressure is applied to the button half 4 by depressing this part with a finger or the like from the upper surface of the part 21. By the application of this pressure the button half 4 is depressed and the retaining disks 8, 9 engage into the locking groove 3. This firmly connects the rigid parts 21, 22. Disengagement of these two parts is likewise effected by brining the key 20 into registration with the upper surface of the button half 4. The key 20 then attracts the retaining disks 8, 9 of a magnetic material so that these retaining disks are tilted upwardly against the force of the return spring 12 and thereby come out of engagement with the locking groove 3 so that the casing-shaped button half 4 may be urged upwardly by its return spring 24 and the rigid bodies 21, 22 may be separated.

In the somewhat modified embodiments shown in FIGS. 8 and 9 the casing-shaped button half 4 is firmly built into the rigid part 21 whereas the button half 1 carrying the bolt 2 is movably mounted at the rigid part 22. Toward this purpose, the button half 1 is mounted for movement against the return spring 24 within the sleeve 23 which is rigidly connected to the part 22 by a screw arrangement or the like. Since in some cases it may be undesirable if the locking bolt 2 freely protrudes from the one part when the parts are separated a setscrew 26 may be provided for retaining the bolt. As soon as this setscrew 26 is removed the button half 1 is urged upwardly by the spring 24. The locking bolt 2 then projects from the surface of the part 22 and may be inserted into the opening 25 of the button half 4 when the contact surfaces of the parts 21 and 22 are brought into engagement. The bolt 2 will then come into engagement with the retaining disks 8, 9 which in the already described manner snap into the locking groove 3. Disengagement may be effected in the already described manner by means of the magnetic key 20.

It will be understood that there may be provided further embodiments in which each of the button halves is directly incorporated into a rigid part 21 or 22 respectively.

FIG. 10 illustrates an application of the invention to a toy box, for example. This box has the shape of a square block, and the plane boundary surfaces of the block may be composed of detachable wall portions bordering each other at the parting lines indicated in the drawing. The small circles in this drawing indicate the locations at which lock buttons according to the present invention may be installed. The one button half of these lock buttons is installed in the respective wall portion whereas the other corresponding button half is in-

stalled in a supporting or connecting element (not shown in this drawing) arranged on the interior of the box.

The actual attachment arrangement is schematically shown in FIG. 11. The reference numerals 30, 31, 32 indicate wall portions of the outer boundary walls of a hollow body such as the box of FIG. 10. The reference numerals 33, 34 indicate supporting or connecting elements such as bars arranged on the interior of the box. The two-part lock buttons for effecting the described detachable connection are schematically indicated by symbols 35 in the shape of a "H" or a small circle respectively and are arranged with their one half in a wall portion and with their corresponding other half in a supporting or connecting element. The one half of each lock button, i.e., the casing-shaped half containing the retaining disks is accessible from the outside of the hollow body thus allowing to apply the magnetic key 20 for disengaging the button halves.

In the embodiment of the lock button illustrated in FIGS. 12 and 13 the reference numeral 1 indicates a button half carrying a lock bolt 2 having four locking grooves 3, 3a, 3b, 3c. The retaining disks 8, 9 are supported at their outer bottom portions on an annular padding 40 of foamed plastic material or the like. The number of locking grooves 3, 3a, 3b, 3c may be freely chosen, as well as the mutual spacings of the locking grooves which may be equal or different.

In order to be able to insert the locking bolt 2 of the button half 1 up to a desired depth into the button half 4 the upper cover plate 4a of the casing of the button half 4 is provided with a center aperture 41 so that the locking bolt 2 which is longer than the depth of the casing of the button half 4 may protrude by its upper end beyond the button half if the bolt 2 has been fully inserted into the button half 4 and the retaining disks 8, 9 engage into the lowermost locking groove 3c of the locking bolt 2. The disengagement of the two parts 4 and 1 is effected by bringing the magnetic key 20 into registration with the surface of the button half 4. Toward this purpose, the key 20 is likewise provided with an aperture 42 thus allowing to bring the key 20 into registration with the upper surface of the casing of the button half 4 if the free end of the locking bolt 2 projects beyond this upper surface. In this case, separation of the two parts 1, 4 is likewise effected by applying the magnetic key 20.

In the embodiment shown in FIG. 14 three button halves 4 are assembled on top of each other and are mounted for joint axial movement in a guide sleeve 23 provided with a bottom plate 23a, this movement being effected against the force of a spring 24 which is in engagement with the bottom plate 23a. For introducing the locking bolt 2 having several locking grooves 3, 3a, 3b, 3c of the button half 1 the bottom plate 23a of the guide sleeve 23 is provided with a center aperture 43. The uppermost button half 4 is restricted in its movement by abutments 23b of the guide sleeve 23. The casings of the three button halves 4 may also be arranged in one piece. The spacings of the locking grooves 3, 3a, 3b, 3c of the locking bolt 2 are arranged such that the retaining disks 8, 9 of the button halves 4 may engage three locking grooves when inserting the locking bolt 2 into these button halves 4. By the engagement of the retaining disks 8, 9 of two or three or even several button halves 4 arranged on top of each other a secure attachment of the button halves unit on the button half 1 is assured.

The disengagement of the guide sleeve 23 with the three button halves 4 from the button half 1 is likewise effected by bringing the magnetic key 20 into registration with the upper button half 4. In order to swivel all of the retaining disks 8, 9 of all button halves 4 simultaneously out of the locking grooves of the locking bolt 2 these retaining disks 8, 9 of all button halves 4 are connected by means of guide rods 44, 45 which are guided in their movements by bores 46, 47 in the upper and lower wall portions of the casings of the several button halves 4. The points of attachment of the guide rods 44, 45 with all of the retaining disks 8, 9 respectively are indicated at 48, 49. Bores which correspond to the bores 46, 47 are likewise provided in the retaining disks 8, 9.

An example of an application of a two-part lock button according to the invention may be the closure member of bandages or holding devices for restless sick persons. The invention however readily offers itself to many other applications and is not restricted to the described and illustrated details. Thus it is possible, for example, to provide a mechanical key for detaching the button halves, instead of a magnetic key. Furthermore the range of application is not restricted to collapsible hollow bodies but also includes all kinds of objects capable of being dismounted. Various objects of practical usage as well as toys, assemblies with replaceable components and assemblies of separable components not intended to be replaced may be fitted with button halves according to the present invention. For unlocking the retaining disks also the magnetic force provided by a remote controlled electromagnet may be employed instead of a key in the form of a permanent magnet.

I claim:

1. A two-part lock button assembly, comprising a first button half, a second button half releasably engageable with said first button half, and means for releasing said second button half from engagement with said first button half, said first button half comprising an axially extending casing, said casing having a first surface disposed transversely of its axis with a centrally disposed opening therein and a second surface disposed transversely of said casing axis and being spaced from said first surface, a pair of retaining disks mounted within said casing between the first and second surfaces and extending transversely of said casing axis, said disks being arranged in substantially coplanar relationship, and each said disk having a retaining edge surface located on an opposite side of said casing axis and in facing and spaced relationship with the retaining edge surface on the other said disk, spring means within said casing for biasing the retaining edge surfaces of said retaining disks toward the first surface of said casing, support means within said casing for said retaining disks including abutment means on the first surface side of said retaining disks against which said disks are biased by said spring means, and bearing support means on the second surface side of said retaining disks about which said retaining disks are tiltably displaceable when the biasing action of said spring means is overcome, said second button half comprising an elongated bolt and a support member secured to and extending transversely of one end of said bolt, said bolt having a circumferentially extending shoulder formed inwardly into said bolt adjacent its end opposite the end connected to said support member and the shoulder being faced toward said support member, and said means for releasing said second button half from engagement with said first button half comprises a member positionable adjacent the second surface of said casing for tiltably displacing the retaining edge surfaces of said retaining disks toward the second surface of said casing against the biasing action of said spring means for releasing said second button half so that it can be withdrawn through the opening in the first surface on the opposite end of said casing.

2. A two-part lock button assembly, as set forth in claim 1, characterized in that said retaining disks being formed of magnetic material and said means for releasing said second button half comprising a magnetic plate positionable against the second surface of said casing in register with the retaining edge surfaces of said retaining disks for attracting said retaining disks toward said second surface and tiltably displacing them for displacing the retaining edge surfaces of said retaining disks from engagement with the shoulder on said bolt.

3. A two-part lock button assembly, as set forth in claim 1, characterized in that a first rigid body having an opening therein with said casing embedded within the opening, a second rigid body having an opening therein and said support member being embedded within the opening with said bolt extending from said second rigid body, said second rigid body having a surface thereon through which said bolt extends arranged to be positioned in contacting engagement with a surface on said first rigid body having an opening therein aligned

with the opening in the first surface of said casing, said first rigid body being open for affording access to the second surface of said casing embedded therein so that said means for releasing said second button half can be positioned adjacent the second surface of said casing for tiltably displacing the retaining edge surfaces of said retaining disks within said casing, a spring member being positioned within one of said first and second rigid bodies for biasing the one of said casing and said second button half within said rigid body containing said spring member in the axial direction of said casing in the direction of the second surface of said casing.

4. A two-part lock button assembly, as set forth in claim 1, characterized in that said bolt has a plurality of circumferentially extending axially spaced grooves in its surface forming a plurality of said shoulders which engage the retaining edge surfaces on said retaining disks, the shoulder in one of said grooves being selectively engageable with said retaining disks, the second surface of said casing having an opening therethrough in axial alignment with the opening through the first surface thereof, and said means for releasing said second button half comprising a magnetic plate member having a centrally disposed opening therethrough and the opening being arranged to be placed in register with the opening in the second surface of said casing when said magnetic plate member is placed against the second surface so that said retaining disks can be tiltably displaced with said bolt being positionable through the opening in the second surface of said casing and in said magnetic plate member in dependence on the extent to which said bolt is inserted into said casing for engagement between the retaining edge surfaces of its retaining disks and one of said grooves on said bolt.

5. A two-part lock button assembly, as set forth in claim 1,

and comprising an axially extending guide sleeve, a plurality of axially aligned said casings forming said first button halves being positioned within said guide sleeve in coaxial relationship therewith, a pair of said retaining disks positioned within each said casing, a spring positioned within said guide sleeve for biasing said casings therein against axial movement within said guide sleeve, said guide sleeve comprising a plate extending transversely across one end thereof and having a centrally disposed opening for receiving said bolt and an inwardly directed flange extending transversely inwardly from the opposite end of said sleeve for retaining said casings forming said first button halves therein against the action of said spring.

6. A two-part lock button assembly, as set forth in claim 5, characterized in that said abutment means comprising annular sections of foamlike plastic, each positioned within one of said casings and extending in the axial direction thereof, said annular sections being positioned for supporting the radially outer portions of said retaining disks relative to the axes of said casings, and guide rods extending axially through said casings positioned within said guide sleeve for interconnecting said retaining disks therein for displacing each of said disks and thereby releasing the retaining edge surfaces of said disks from said bolt when said means for releasing said button half is positioned against the second surface of said casing adjacent the end of said guide sleeve having the inwardly directed flange.

7. A two-part lock button assembly, as set forth in claim 2, characterized in that said magnetic plate for releasing the retaining edge surfaces of said retaining disks from engagement with said bolt comprises an electromagnet arranged adjacent the second surface of said casing for tiltably displacing said retaining disks upon its energization.

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