

[54] CASE HAVING MAGNETIC LOCK MEANS
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[22] Filed: Aug. 9, 1972

[21] Appl. No.: 279,181

[30] Foreign Application Priority Data

Nov. 17, 1971 Japan..... 46-107707

[52] U.S. Cl. 220/55 K, 220/55 MG, 292/33,
 292/144, 70/276

[51] Int. Cl. A47j 27/08, A47j 36/10, B65d 45/00

[58] Field of Search..... 220/55 K, 55; 206/DIG. 33;
 292/144, 33; 70/276

[56] References Cited

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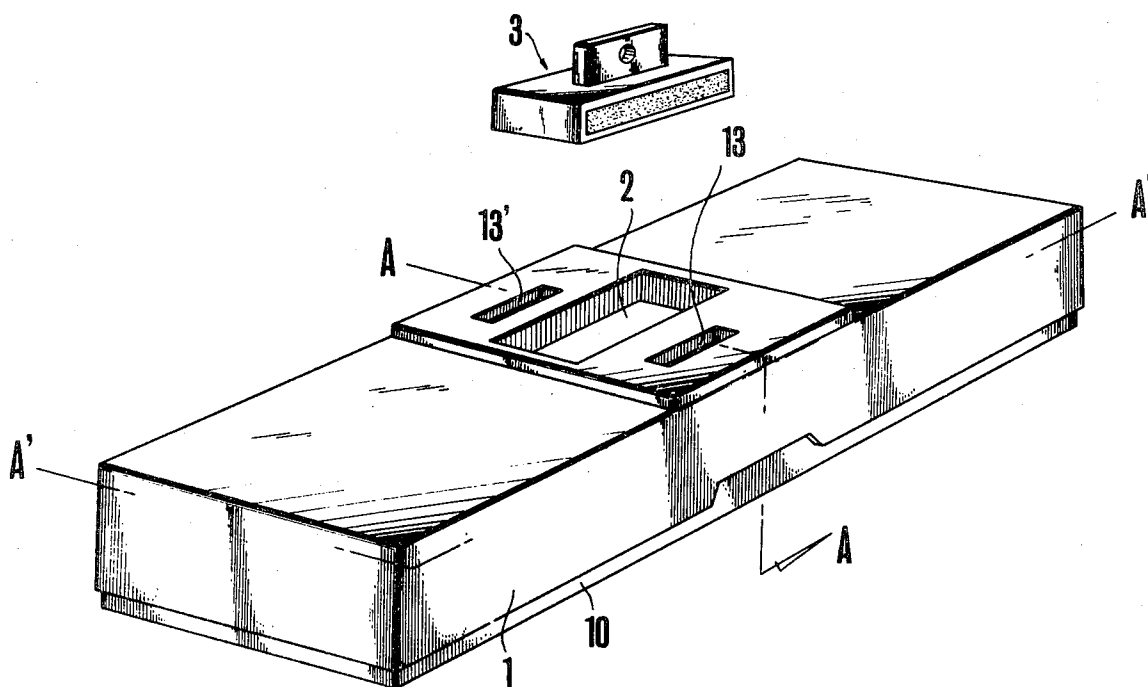
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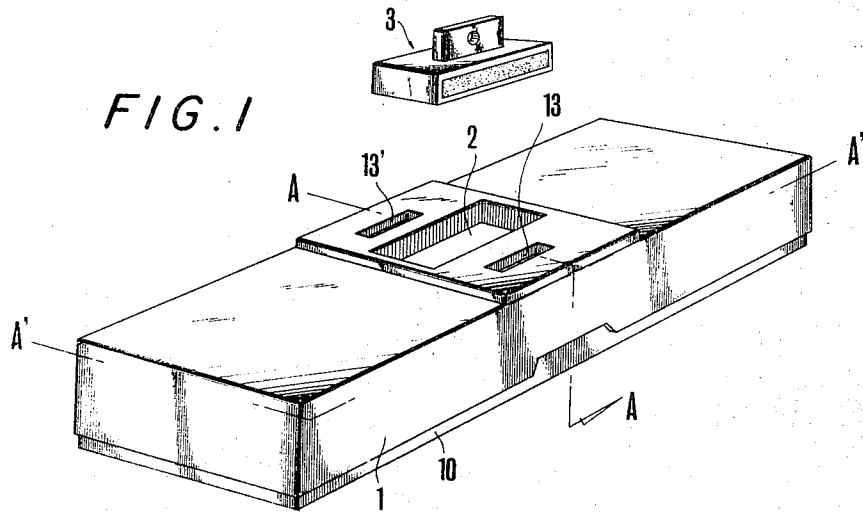
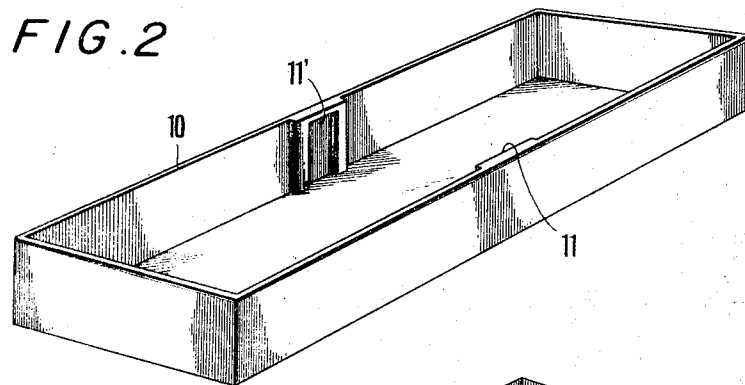
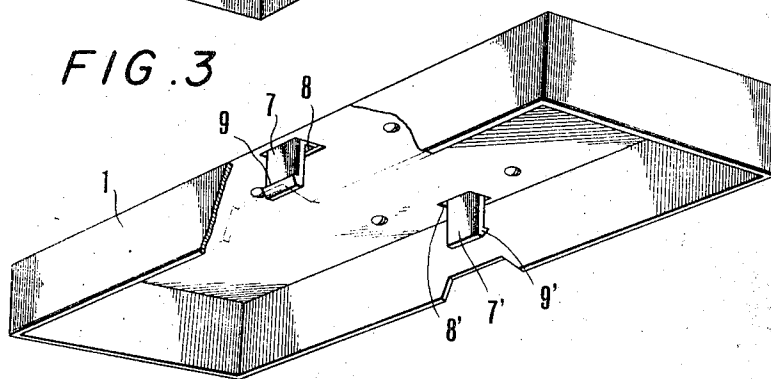
Primary Examiner—George T. Hall
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[57] ABSTRACT

A case includes a bottom part or tray with a cover part which is telescopically engagable therewith. The top and bottom parts include interengagable latching members, namely a movable depending latch carried by the cover which is engagable with a detent or receiving latch part carried by the bottom when the two parts are telescopically engaged. The top part or cover includes a recess in which designed to receive a magnet, which magnetically attracts the latch parts carried by the bottom so that they are displaced out of engagement with the receiving detents carried by the bottom part to unlock the device. The magnet is provided with a handle so that it may be lifted into and out of the recess defined in the top part in accordance with whether the two parts are to be locked together or unlocked.

5 Claims, 7 Drawing Figures





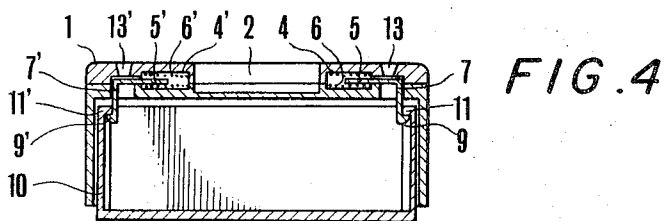


FIG. 5

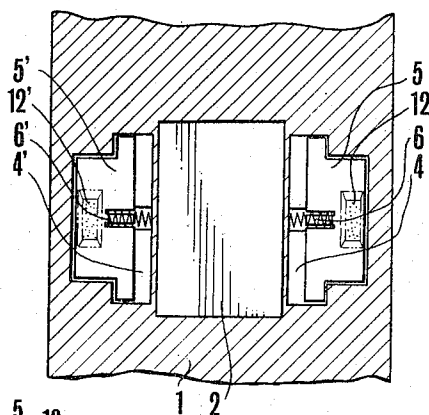
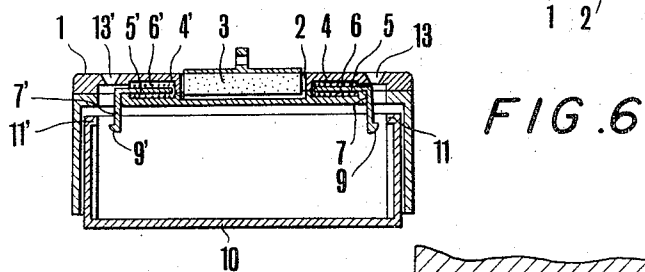
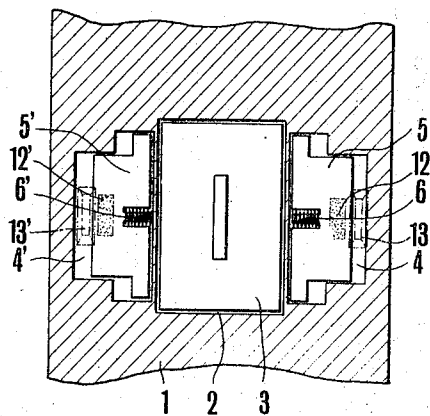


FIG. 7



CASE HAVING MAGNETIC LOCK MEANS

FIELD OF THE INVENTION

This invention relates in general to the construction of interengagable container parts and in particular to a new and useful case or container which is made up of telescopically interengagable top and bottom parts and which includes magnetic means for effecting latching and unlatching of the two parts.

DESCRIPTION OF THE PRIOR ART

The present invention relates to the lock device of the lid of a container such as a pencil case. As a conventional container such as a pencil case has not been provided with a lock device, more or less expensive commodities can not be contained with safety. Recently some pencil cases have been provided with the lock device, but the mechanism is complex and expensive. The object of this invention is to offer a container such as a pencil case having the lock device which is simple in its mechanism.

Accordingly it is an object of the invention to provide an improved container having a novel means for latching and unlatching two interengagable container parts which includes a magnet which is positionable to attract the latch members to displace it either into a latching position or into an unlatched position, in accordance with the setting of the magnet and the latched parts.

A further object of the invention is to provide a container which includes a rectangular box shaped bottom part and similarly shaped upper part which is engagable over the bottom part and wherein the top part includes a depending latch member on each side which are engagable with respective receiving detents defined on the side walls of the bottom part when the two parts are telescopically interengaged and the container is closed, and wherein the top part includes a recess for receiving a magnet which when positioned in the recess will attract the latch members of the top part to move them out of engagement with the bottom latch part and detents.

A further object of the invention is to provide a case which is simple in design, rugged in construction and economical to manufacture.

For an understanding of the principles of the invention, reference is made to the following description of typical embodiments thereof as illustrated in the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

In the Drawings:

FIG. 1 is a front top exploded perspective view of a case constructed in accordance with the invention;

FIG. 2 is a top side perspective view of the bottom portion of the case shown in FIG. 1;

FIG. 3 is a bottom side perspective view of the top portion of the case shown in FIG. 1 and with a portion thereof being broken away;

FIG. 4 is a section taken along the line A—A of FIG. 1;

FIG. 5 is a section taken along the line A'—A' of FIG. 1;

FIG. 6 is a section similar to FIG. 4 showing the magnetic device in the attracted position;

FIG. 7 is a view similar to FIG. 5 showing the magnetic device in position.

GENERAL DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings in particular, the invention embodied therein comprises a casing generally designated 10, which includes a lid or cover part 1 of rectangular box shaped form which telescopically engages over a bottom part of similar form.

In accordance with the invention the top part 1 includes a top wall with a recess or indentation 2 of rectangular form shaped to receive the bottom portion of a magnet holder 3 which includes a handle portion for lifting it into and out of the indentation or recess 2. The top wall of the top part 1 includes a hollow portion with cavities 4 and 4' on each side of the indentation 2 as shown in FIG. 4. The two cavities include latch means which are interengagable with detents 11 and 11' of the bottom 6 when the two parts are telescoped together. The latch means include hook shaped latch members 7 and 7' having horizontal portions which ride in the respective hollows 4 and 4' and depending portions which terminate in hooks 9 and 9' which engage into recesses or detents 11' and 11 respectively of the bottom part 10. When the latch parts 7 and 7' are in the operative position the hooks 9 and 9' will engage automatically into the detent holders 11' and 11. In accordance with a feature of the invention the entire latch part 7 and 7' is made of magnetically attractable material or it includes a magnetically attractable portion 5 and 5' respectively which ride in the hollow spaces 4 and 4' and which are biased into an operative position by springs 6 and 6' respectively. In the operative position shown in FIG. 4 the hooks engage into the detents 11' and 11 of the bottom part and hold the two parts together so that they may not be unlocked. However when the latches 7 and 7' are attracted by a magnetic field the hooks 9, 9' are moved out of engagement with the associated detents 11, 11'.

The example shown in the drawing consists of a case of a covering type made of hard synthetic resin. In the example, the engagement or disengagement of the hooked projections (7) (7') and the connections (11) (11') can be discerned by the indication of the displaying areas (12) (12') provided to the outside of the magnetic pieces (5) (5') through the peep holes (13) (13') provided to the ceiling wall of the hollow indentations (4) (4').

In the present invention described above, by lightly pressing the lid (1) placed on the case proper (10) the hooks (9) (9') at the tip of the magnetic pieces (5) (5') are engaged with the connections (11) (11') to make it impossible to open the lid (1) due to the mechanism in which the magnetic pieces (5) (5') are forced into against the elasticity of the spring elements (6) (6') and then withdrawn to the former position when the jaws of the hooked projections (7) (7') engage with the protruded edges of the connections (11) (11'). On the other hand, when the magnetic device (3) is fixed into the indentation (2) the magnetic pieces (5) (5') are drawn near and the engagement between the hooks at the tip of the projections (7) (7') and the connections (11) (11') can be released.

As mentioned above, in the present invention relating to the case of a covering type the indentation (2) is formed on the surface of the ceiling wall of the lid (1)

and the flat hollow indentations (4) (4') are formed on the both sides of said indentation (2) with which the magnetic device (3) is connected or disconnected, the magnetic pieces (5) (5') being provided to the hollow indentations (4) (4') so that the former can proceed to or recede from the indentation (2), the spring elements (6) (6') being provided so that the magnetic pieces (5) (5') can be withdrawn to the farther position, the hooked projections (7) (7') turning outward being provided to the underside of said magnetic pieces (5) (5') and protruded to the underside of the lid (1) through the holes (8) (8'), and the hooks (9) (9') at the tip of the projection (7) (7') are made to engage with the connections (11) (11') provided to the case proper (10), so that it can properly be said that the present invention has excellent merits in the easy and exact engagement and disengagement of the lid (1) as described in the above example, especially in the exact engagement due to the elasticity of the spring elements (6) (6') provided to the magnetic pieces (5) (5').

What is claimed is:

1. A case comprising a bottom substantially rectangular box shaped bottom part having side walls, at least one of said side walls having an interior recess defining a detent, a top part of substantially rectangular box shaped configuration telescopically engageable over said bottom part, a latch member including a horizontal portion slidable on said top part and a vertical portion depending from said horizontal portion and said top part and defining a hook engageable with said detent of said bottom part, means biasing said latch member to cause said hook to engage in said detent, a receiving area demarcated on said top part, a magnet positionable on said receiving area at a location where its magnetic field is disposed in the range of said latch member, said latch member including at least a portion which is magnetically attractable which is moved by positioning of said magnet in said receiving area against the force of said biasing means to remove said hook portion out of engagement with said detent to open said case.

2. A case according to claim 1 wherein said top part includes a wall defining a hollow with a viewing opening overlying said latch member, said latch member being movable in the hollow of said wall below said viewing opening and being visible in said viewing opening to indicate when said casing is latched and unlatched.

3. A case according to claim 1 wherein said bottom part includes a recess defining a detent on each side wall, and said casing also including a latch for engage-

ment with each detent located on respective sides of said receiving area, each of said latches including a depending portion with a hook shaped end engageable with said detent, each of said latches including a beveled face which is deflectable to clear said detent by the area of said side walls of said bottom part adjacent to said detent when said top part is closed over said bottom part and being movable after deflection into engagement with said detent.

4. A case of a covering type characterized by a case (10) with connections (11) (11') having a lid (1) with holes (8) (8') therein with a ceiling wall having a surface with a central indentation (2), and flat hollow indentations (4) (4') on each side of said central indentation (2), a magnetic device (3) engageable and disengageable in the central indentation, magnetic pieces (5) (5') located in the hollow indentations (4) (4') movable in respect to the magnetic device when in the central indentation (2), spring elements (6) (6') biasing said magnetic pieces (5) (5') to an outer position, said magnetic pieces having hooked projections (7) (7') turning outward and protruding from the underside of the lid (1) through the holes (8) (8') and engageable with the connections (11) (11') of said case when urged by said spring elements, but being movable against the biasing force of said spring elements by said magnetic device to disengage from said connections.

5. A case comprising a bottom part, a cover part engageable with said bottom part, interengageable latch parts carried on said bottom part and said cover part in a position to interengage when said cover part is engaged on said bottom part for locking said parts together and including a magnetically attractable displaceable latch member, and magnet means associated with the case for attracting and releasing said latch member for opening and closing said latch parts, said cover part being telescopically engageable with said bottom part and wherein said bottom part comprises a rectangular box shaped portion having side walls and at least one of said side walls having a recess defining a detent, said magnetically attractable latch member comprising a member carried on said top part and being displaceable on said top part, said member having a hook-shaped latch engageable with said detent, means for biasing said latch member to urge the hook-shaped portion into engagement with said recess detent of said bottom part, said magnet being positionable to overcome the force of said biasing means to move said latch member out of engagement with said detent.

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