Oct. 15, 1968 C. S. GEHRIE 3,405,544

COMBINATION LOCK

Filed Nov. 9, 1966 4 Sheets-Sheet 1

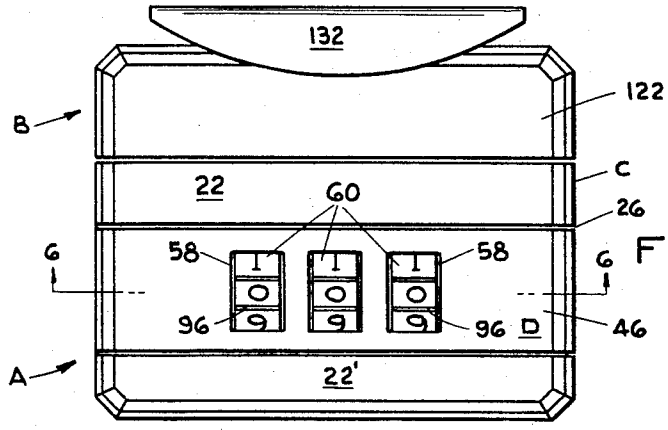


FIG. 1

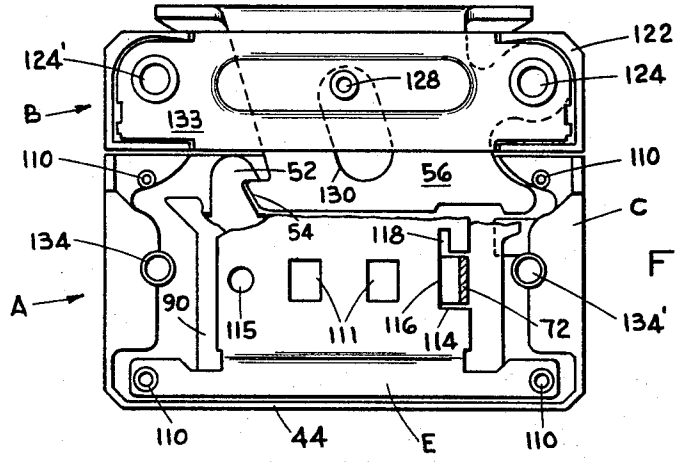


FIG. 2

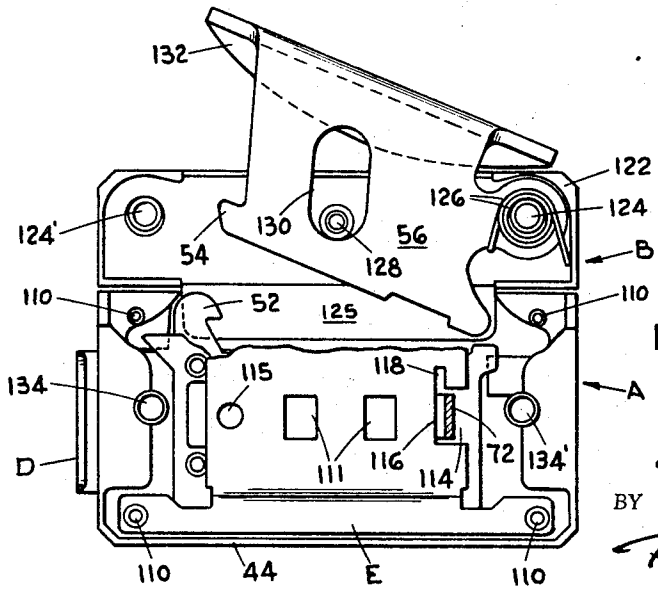


FIG. 3

INVENTOR.
CHARLES S. GEHRIE
BY Harry S. Shapiro
ATTORNEY

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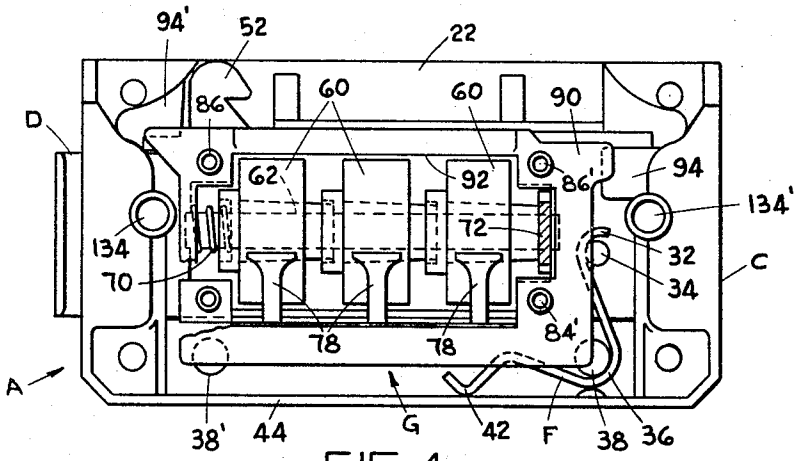


FIG. 4

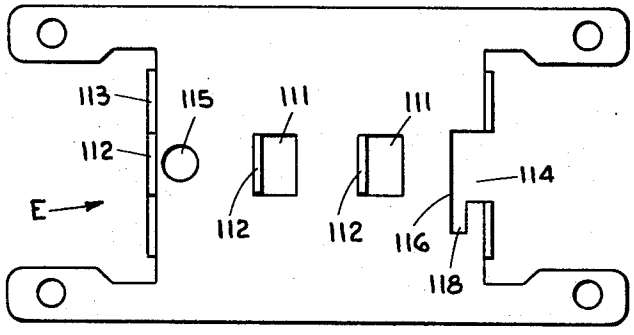


FIG. 5

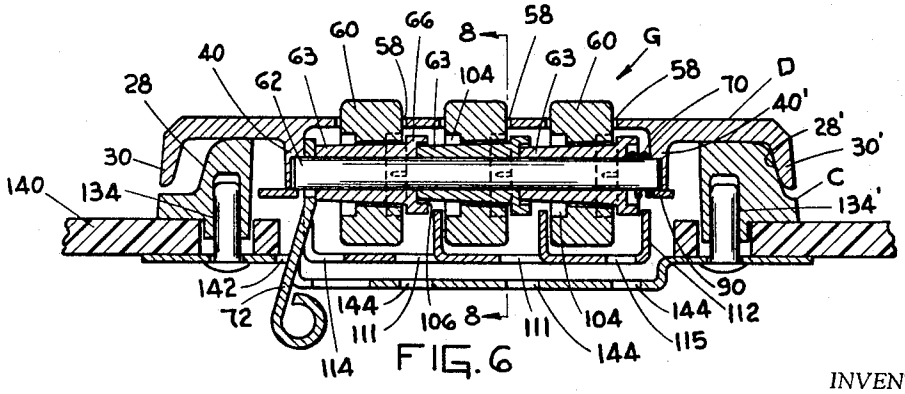


FIG. 6

INVENTOR.
CHARLES S. GEHRIE
BY
Harry S. Shapiro
ATTORNEY

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COMBINATION LOCK

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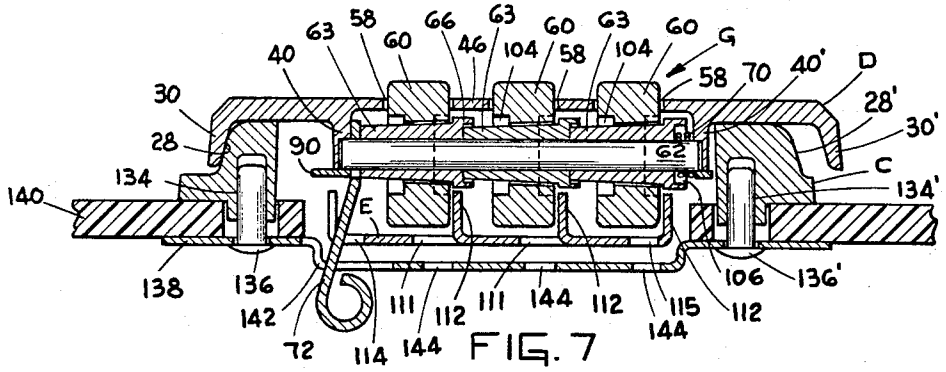


FIG. 7

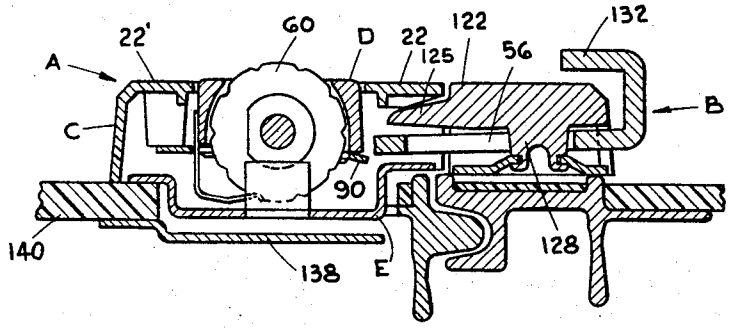


FIG. 8

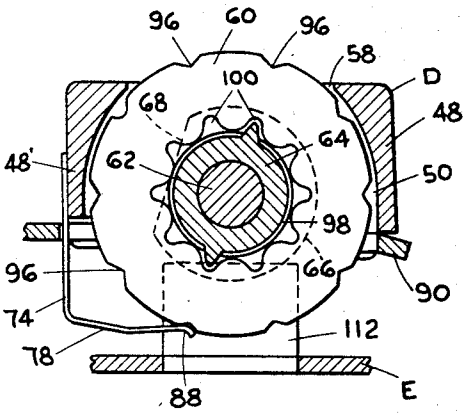


FIG. 9

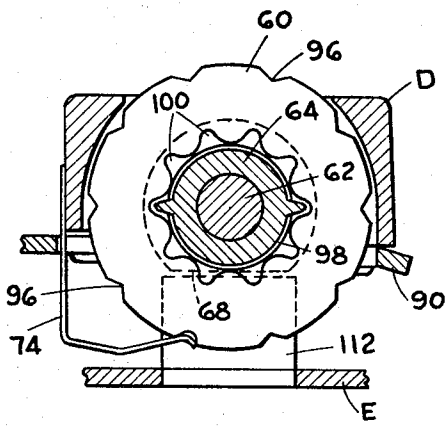


FIG. 10

INVENTOR.
CHARLES S. GEHRIE
BY Harry G. Shapiro
ATTORNEY

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COMBINATION LOCK

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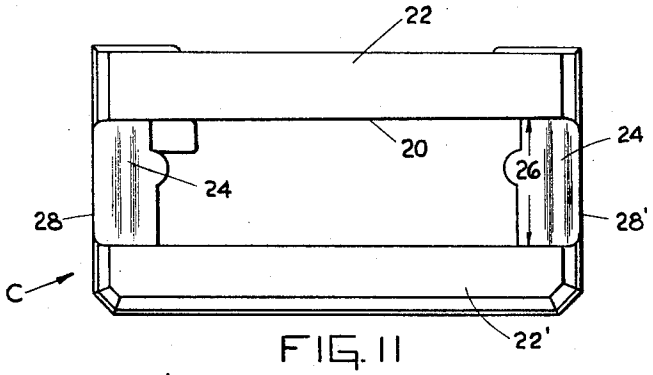


FIG. 11

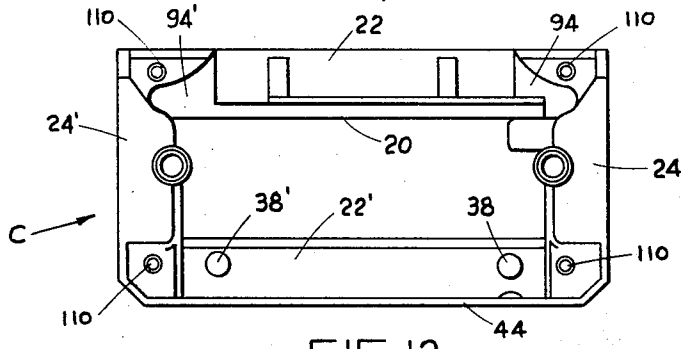


FIG. 12

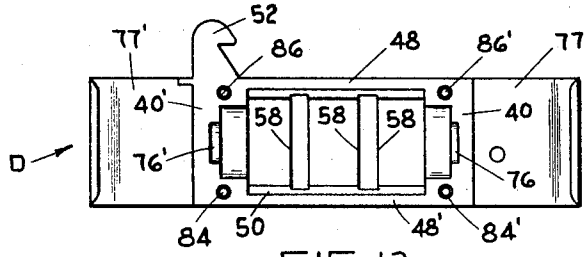


FIG. 13

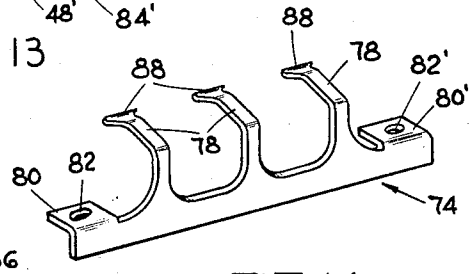


FIG. 14

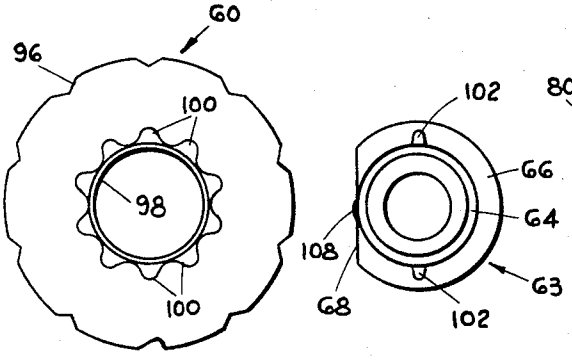


FIG. 15

INVENTOR.
CHARLES S. GEHRIE
BY
Harry S. Shapiro
ATTORNEY

United States Patent Office 3,405,544 Patented Oct. 15, 1968

3,405,544

COMBINATION LOCK

Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

Filed Nov. 9, 1966, Ser. No. 593,095
2 Claims. (Cl. 70—74)

ABSTRACT OF THE DISCLOSURE

A combination lock of the type having a manipulatable latching slide member which supports the dials and associated means for movement therewith wherein the slide member is supported for movement in a guideway provided by a plate member, the slide member having means extending from a side thereof for cooperation with a hasp which enters the side of the plate member beneath the plate member's upper surface.

The invention relates to releasable latching devices for luggage cases or the like provided with keyless or combination locking means, and is more particularly directed to improvements in combination locking means of the type disclosed in Reissue Patent No. 16,833 granted Dec. 27, 1927.

An object of the invention is to provide a latching device having combination lock means associated therewith, hereinafter referred to as a combination lock, wherein an essential component of the latching device serves the added function of contributing to the means for locking and unlocking the device, and for changing the combination. As a result, the number of parts and operations required to make and assemble the product is reduced, thereby enabling a reduction in the cost of manufacture.

Another object of the invention is to provide a combination lock wherein the dials and associated means for locking and unlocking the device are carried for movement upon the essential latching slide member.

A further object of the invention is to provide a combination lock, the locking components of which are so compactly arranged that they may be mounted upon the relatively small latching slide member of the latching assembly.

Another object of the invention is to provide a combination lock with a visual finding feature whereby the combination lock may be opened or unlocked without the necessity of knowing the combination. This feature enables setting the lock to open combination when a dial is inadvertently or otherwise rotated to place the combination in locked condition and the open combination is not known.

These, and other advantages, and improved results of the invention will be apparent from the following detailed description, taken in conjunction with the drawings illustrating a preferred embodiment of the invention, in which:

FIG. 1 is a top plan view of a combination lock made in accordance with the invention;

FIG. 2 is a rear view of the lock in its latched condition, a portion of the back cover being broken away to show the latching slide member in latching engagement with the hasp plate of the hasp assembly;

FIG. 3 is a view similar to FIG. 2, this view showing the device in unlocked and unlatched condition;

FIG. 4 is a rear view of the combination lock, apart from the hasp assembly, with the back cover completely removed;

FIG. 5 is a top plan view of the inside face of the back cover;

FIG. 6 is a longitudinal, vertical, cross-sectional view taken approximately in the plane of line **6—6** of FIG. 1, the latching slide member being shown in latched position and locked, this view additionally showing the manner in which the combination lock may be secured to the wall of a luggage case or like receptacle;

FIG. 7 is a view similar to FIG. 6, the lock being shown in unlocked condition; this condition also permitting the combination to be changed;

FIG. 8 is a transverse vertical, cross-sectional view taken approximately in the plane of line **8—8** of FIG. 6, this view also showing the hasp assembly in engaged position and secured to the wall of a luggage case or the like;

FIG. 9 is an enlarged view showing the relationship of a dial, its associated flanged sleeve, and means for preventing movement of the latching slide member;

FIG. 10 is a view similar to FIG. 9, except that the flanged sleeve is shown oriented to permit actuation of the latching slide member to unlatched position when all of the flanged sleeves are so oriented;

FIG. 11 is a top plan view of the plate member or body component of the device;

FIG. 12 is a plan view of the underside of the plate member;

FIG. 13 is a view of the underside of the latching slide member component of the device;

FIG. 14 is a perspective view of the resilient or spring means cooperable with the several dials of the locking means; and

FIG. 15 shows a dial with an associated flanged sleeve.

The compactness of the combination locking means is best illustrated with relation to a latching device of the type disclosed in Levine Patent No. 2,820,359 granted Jan. 21, 1958. As will be hereinafter described, the combination locking means is incorporated in and carried by the latching slide member of the latching assembly, and the essential back cover is made to provide cooperable means so that latching and unlatching, locking and unlocking, and changing of the combination may be achieved.

Referring to the drawings, a combination lock made in accordance with the invention comprises a latching assembly having combination locking means associated therewith, generally designated A, for cooperation with a hasp assembly B. As will be subsequently explained, the hasp assembly B may be of the same or similar construction as disclosed in the aforementioned Levine patent. Essentially, the assembly A comprises a body or plate member C, a latching slide member D, a back cover E, resilient means F (FIG. 4) intermediate the plate member C and the latching slide member D to resiliently urge the latching slide member toward latched position, and the parts of the combination locking means, generally designated G, such locking parts being secured to and carried by the essential latching slide member of the latching and locking assembly.

As shown in FIGS. 1, 2 and 3, and more particularly FIGS. 11 and 12, the plate member C is generally rectangular in shape and has a central opening **20**, also of rectangular configuration. The opening is defined by the parallel, spaced, longitudinally extending portions **22**, **22'** and the connecting cross portions **24**, **24'** at the ends of the piece. In order to fulfill its various functions most effectively with the greatest economy of manufacture, the plate member preferably is made by die casting. The plate member provides a longitudinally extending guideway **26** which is outwardly open and open at the ends of the plate member. The guideway is defined by the inner edges of the portions **22**, **22'** and by the upper surfaces of the cross portions **24**, **24'**. The upper surfaces of the cross portions lie in a plane below the plane of the upper surfaces of the longitudinally extending portions. The

outer sides of the cross portions **24**, **24'** furnish stops **28**, **28'** to limit the extent that the latching slide member D may move with respect to the plate member when the latching slide member D is positioned for longitudinal movement within the guideway **26**.

As shown in FIG. 1, the latching slide member D has a width slightly less than the guideway **26** so that it may slide in the guideway without interference. As shown in FIGS. 6 and 7, the latching member is provided with downwardly extending end flanges **30**, **30'** for cooperation with the end stops **28**, **28'**, respectively, on the plate member C. When assembled with the plate member, the top surface of the latching slide member lies in substantially the same plane as the top surfaces of the adjoining portions **22**, **22'** of the plate member as shown in FIG. 8.

As shown in FIG. 4, the resilient means F is preferably in the form of a bent leaf spring. It is located intermediate the plate member and the latching slide member to resiliently urge the latching slide member toward latched position, and allows the slide member to be manually retracted to unlatched position against the force of the spring. The bent leaf spring is held in position and normally urges the latching slide member to latched position by having one end **32** of the spring curled about a positioning stud **34** provided by the latching slide member. The bent central portion **36** of the spring is extended around a positioning lug **38** provided by the plate member, and end **42** of the spring bears against a downwardly extending flange **44** defining the lower side of the plate member. The latching slide member is secured to the plate member in a manner to be subsequently described.

As shown in FIGS. 1, 6, 7 and 13, the latching slide member has a top wall **46** and downwardly extending side walls **48**, **48'** which, together with an end wall **40** and opposite end wall **40'** longitudinally spaced therefrom, define an inner cavity **50** (FIG. 13) open toward the bottom of the latching slide member. As best seen in FIG. 13, the walls **40**, **40'** are located inwardly from the end extremities of the latching slide member so that the cavity **50** extends for only a portion of the length of the slide member. A hook **52** is provided to extend from the lower edge of the top side wall **48** near one end thereof. The hook cooperates with a cooperable hook portion **54** provided on a hasp plate **56** of the hasp assembly B. In view of the various portions and functions of the latching slide member, it is preferred, in the interest of economy of manufacture, to make the latching slide member by die casting.

As shown in FIGS. 1, 6, 7 and 13, the top wall **46** of the latching slide member D is provided with a plurality of longitudinally spaced slots **58** extended through the wall in communication with the cavity **50**. In this embodiment of the invention illustrated, the combination locking means G includes three dials **60**; therefore, there are three slots. With three dials, each having ten indicia or numbers thereon, there are one thousand different position combinations available. It will be understood that any desired number of dials may be used to furnish the desired number of available combinations.

The latch sliding member D is constructed to carry for movement therewith the parts constituting the combination means for locking the latching slide member in its latched condition; also, to enable unlocking the latching slide member so that it may be retracted to unlatched condition. The latching slide member is provided with bearing means for journaling a shaft **62** upon which the dials **60** are mounted, together with a flanged sleeve **63** having a flat portion associated with each dial. The shank, and flat portions of each sleeve are designated **64**, **66** and **68**, respectively (FIG. 15). Also, as shown in FIGS. 6 and 7, the shaft serves to support resilient, sleeve-cooperable means **70** acting to normally urge the sleeves into keyed relationship with their respective dials. In addition, the shaft serves as a support for means **72** for shifting the sleeves out of keyed engagement from their respective dials when it is desired to change the combination. Further, the latching slide member serves as a support for resilient, dial-cooperable means **74** (FIG. 14) to resiliently maintain the dials in desired circumferential position on the shaft.

The underside of the latching slide member D is provided with longitudinal spaced bearings to receive the ends of the shaft **62**. Preferably, and as shown in FIG. 13, the bearings are cast in the end walls **40**, **40'** in the form of substantially hemispherical bearings **76**, **76'** open to the underside. The latching slide member is positioned in the guideway **26** with the hook portion **52** of the slide member located on the underside of the top portion **22** of the plate member C. In such relationship, the undersides of the portions **77**, **77'** of the latching slide member (FIG. 13) respectively engage the top surfaces provided by the cross portions **24**, **24'** of the plate member. The shaft **62** is extended through the dials **60** and their associated sleeves **63**. The resilient, sleeve-cooperable means **70** in the form of a compression spring is positioned over one end of the shaft. A lever, constituting the means **72** for shifting the sleeves out of keyed engagement from their respective dials, is slideably positioned over the opposite end of the shaft. The shaft with the described parts mounted thereon is then assembled with the latch sliding member by placing the ends of the shaft in the open bearings **76**, **76'**. The shaft and parts supported thereon are placed in position so that the dials **60** extend partially through the slots **58**; whereupon the dials, while rotatable, cannot move on the shaft in a longitudinal direction.

The resilient, dial-cooperable means **74** is then positioned to engage the individual dials. As shown in FIG. **14**, such means comprises a member having a plurality of spring fingers **78**, one finger for each dial. The spring member is provided with tabs **80**, **80'** having means in the form of apertures **82**, **82'** to facilitate connection to the latching slide member. As shown in FIG. 13, the latching slide member is preferably formed with a plurality of connecting studs—the bottom longitudinally spaced studs **84**, **84'** and the spaced top studs **86**, **86'**. The spring member is placed in position with the studs **84**, **84'** extended through the apertures **82**, **82'**, and with the ends **88** of the fingers **78** resiliently bearing against the outer peripheries of the dials **60**. The assembly of the parts to the latching slide member is completed by connecting a retainer plate **90** to the latching slide member.

The retainer plate **90** is best shown in FIG. 4; it is also shown in FIGS. 6 and 7. The retainer plate is substantially rectangular in shape and has a substantially rectangular central opening **92** to allow the dials **60**, the flanged sleeves **63**, the spring fingers **78** and the shaft lever **72** to extend therethrough. The retainer plate is provided with holes near its corners to allow the connecting studs **84**, **84'**, **86**, **86'** to be extended through the holes. The extremities of the studs are swaged over to complete the sub-assembly. The retainer plate covers the ends of the shaft **62** in the bearings **76**, **76'** to connect the shaft and the parts mounted thereon to the latching slide member; also, the dial-cooperable spring member **74** is secured in position.

The retainer plate also functions to connect the latching slide member and combination locking means mounted thereon to the plate member C. As shown in FIGS. 4 and 12, the underside of the plate member is provided with a plurality of supporting surfaces against which the retainer plate may bear for sliding engagement. The preferred die cast plate member provides a pair of longitudinally spaced bearing surfaces in the form of projections **38**, **38'** near the bottom of the plate member. As previously indicated, one projection **38** also serves to position the spring F. At the top of the plate member and also on the underside thereof, longitudinally spaced supporting surfaces **94**, **94'** are provided. As shown in FIG.

4, the retainer plate **90** is dimensioned and contoured so that in the latched and unlatched positions of the latching slide member, surfaces provided by the retainer plate are slidably related to the surfaces provided by the bearing surfaces **38**, **38'** and **94**, **94'**. Since, as previously described, the latching slide member has the inner faces at **77**, **77'** in sliding engagement with the upper surfaces of the cross portions **24**, **24'** of the plate member, the latching slide member is connected to the plate member and confined for sliding movement in the guideway **26**.

As shown in FIG. 1, the dials **60** are each provided with indicia or numbers in equidistantly spaced relation on the outer circumference. Grooves **96** are provided between adjacent numbers to receive the tips **88** of the spring member **74** so that the dials may be resiliently maintained in selected circumferential position. Referring to FIGS. 9, 10 and 15, each dial has a central opening **98** through which the shank **64** of the sleeve **63** may be extended with a slight amount of clearance. The flange **66** on each sleeve is of a larger diameter than a dial's central opening. On one side of each dial, circumferentially arranged detent receiving recesses **100** are provided adjacent the opening **98**, there being one recess in alignment with each number on the dial. The recesses **100** extend only partially into the side wall of the dial and are adapted to receive a detent or detents **102** located at the juncture of the flange **66** with the shank **64** of a sleeve, whereby a dial and a sleeve may be keyed or meshed to one another. On the opposite side of each dial, an annular recess **104** (FIGS. 6 and 7) is provided. Such recess has a diameter slightly larger than the diameter of a flange **66** on a sleeve. When the sleeves are shifted out of keyed relationship with their respective dials, the flange **66** of a sleeve to the left of a given dial, as viewed in FIGS. 6 and 7, may enter a recess **104** of such dial to allow movement of the sleeves to the extent necessary. Each sleeve is provided at its flanged end with an annular recess **106** (FIGS. 6 and 7) to receive the end of a shank **64** of an adjacent sleeve when the sleeves and their respective dials are mounted on the shaft **62**. Also, the recess **106** of the sleeve which is adjacent the spring **70** receives the spring and provides a bearing surface for one end of the spring. The flat **68** is provided with a spot of paint **108** (FIG. 15), the paint preferably being of the luminescent type for a purpose to be subsequently described.

When the dials **60** and their respective sleeves **63** are assembled on the latching slide member, together with the spring **70** and the lever **72**, the spring causes the sleeves to be keyed to the dials because of the resilient pressure imposed upon the sleeves which, as shown in FIGS. 6 and 7, are in abutting, end to end engagement; the detents **102** are received within recesses **100** in each of the longitudinally fixed dials. When the lock is on open combination as shown in FIG. 7 (the flats **68** are all oriented as shown in FIG. 10), moving the lever **72** to the right imparts longitudinal movement to all of the sleeves to cause the detents **102** to move out of the recesses **100** of the dials, thereby permitting changing the relationship of a dial with respect to its sleeve. Rotation of a dial changes the position of the flat portion **68** of an associated sleeve with respect to a given number on the dial. The release of pressure upon the lever **72** results in the spring **70** moving the sleeves to return them to keyed engagement with their respective dials.

The combination of indicia or numbers exposed on the outer side of the latching slide member which will enable unlatching the device, or to lock the latching slide member in latched position, depends upon the alignment or misalignment of the flat portions **68** of the sleeves with one another and with respect to cooperable blocking means. The blocking means is provided by the essential back cover E.

As shown in FIGS. 2, 3, 6 and 7, the back cover E is constructed for connection to the plate member C to protect the elements of the combination locking means and to provide means cooperable with the flanged and flat portions of the sleeves. The back cover, which preferably is made as a stamping, is provided at its corners with holes (FIG.5) through which are extended connecting studs **110** integrally formed to extend from the underside of the plate member C near its corners. The ends of the connecting studs are swaged over to secure the parts together. As shown in FIG. 8, the back cover connected to the plate member furnishes an opening at the top of the assembly to allow entry of the hasp plate **56** and a dowel provided by the hasp member to which the hasp plate is connected.

The back cover E is dished to allow room for the dials, and further to dimensionally locate in desired position the ends of a plurality of longitudinally spaced, upstanding lugs **112**. Two of the lugs may be pierced and struck up from the back cover to provide apertures **111** for a purpose to be subsequently described. The third lug may be provided by an extension of the end wall **113** (FIG. 5). An adjacent aperture **115** is provided for such lug. When the back cover E is secured to the plate member C, the lugs are positioned in the path of the flanges **66** on the sleeves to prevent unlatching, and the flanges and the flats are in alignment for viewing through the apertures **111**, **115** as shown in FIG. 6.

The height of each of the lugs **112** is such that when the flange **66** of any one of the sleeves is oriented as shown in FIG. 9, there is interference or blocking to prevent longitudinal movement of the latching slide member. With the latching assembly A latched to the hasp assembly B, the device is locked. When the dials are rotated to "open" combination, the flats **68** are adjacent the lugs, and there is clearance as shown in FIG. 10. As a result, the latching slide member may be shifted to unlatched position, Also, the sleeves may be shifted longitudinally by the lever **72** to disengage the sleeves from their respective dials, thereby permitting setting of a selected combination on the dials. After the combination of numbers desired is exposed at the front of the device, the pressure on the lever **72** is released to key the sleeves to the dials. Any other combination than the one selected will not permit the latching slide member to be moved to unlatched position.

As shown in FIGS. 2, 3 and 5, the back cover E is provided with an end slot **114** having a width to allow the lever **72** to move up against the edge **116**, whereupon the lever may be rotated on the shaft **62** into the adjoining transversely extending slot **118** to hold the lever in such position while the dials are rotated to a selected combination at the front face of the device. Reverse movement of the lever sets the combination.

There are instances when the open combination may be changed and in effect lost. When the combination lock is shipped by the lock manufacturer to the luggage manufacturer who will assemble the lock with a luggage case, the lock is in its open combination; that is, the flats **68** on all the sleeves are related to the lugs **112** as shown in FIG. 10. When the luggage case with the lock secured thereto is in a luggage shop or department of a store, the lock must be on open combination so that the purchaser of the case may then set the lock with a combination of his own secret selection.

It has been found that prospective customers of luggage are tempted to manipulate combination locks before becoming familiar with the written instructions which accompany the luggage case. As a result, the latching slide member is locked in its latched condition, with the open combination unknown. This situation has occurred frequently, and has caused much difficulty. Luggage cases with the tampered locks are returned to the luggage manufacturer. In addition to onerous shipping charges, the manufacturer must bear the expense of trying to salvage the locks. The locks must be removed from the case shells, and then the back cover must be removed to expose the interior of the lock. This requires a great deal of effort, and often the locks are mutilated beyond repair.

The foregoing problems and attendant difficulties are obviated by the providing the back cover with the aforementioned spaced openings **111, 115**, together with the provision of the indicator **108** on the flats **68**. By sighting through the openings and rotating the dials having the sleeves keyed thereto, the dials are rotated until one may see the visual indicator **108** on each flat **68**. With the combination open, the latching slide member may be moved to unlatched position, the lever **72** may be moved to disconnect the sleeves from their respective dials, and the dials rotated to the secret combination selected.

The hasp assembly B, as previously indicated, may be a known construction, for example as shown in the aforementioned Levine patent. As shown in FIGS. 1, 2 and 3, the hasp plate **56** is pivoted to a hasp body **122** at **124**. The hasp body may be provided at its lower side with a dowel **125** which is adapted to enter the space between the plate member C and the back cover E at the top of the assembly. A spring **126** (FIG. 3) is coiled about the stud or pin **124** with one end of the spring bearing against a wall provided by the hasp body **122** and with the other end of the spring engaging the hasp plate **56**. The spring normally urges the hasp plate to its up or disconnected position. The pivoted hasp plate is limited in its upward movement by a stop stud **128** projecting from the rear side of the hasp body. The hasp plate is provided with a cutout **130** cooperable with the stud **128** to limit the extent of movement of the hasp plate. The hasp plate has a fingerpiece portion **132** to facilitate moving the hasp plate from the unlatched position shown in FIG. 3 to the latched position shown in FIG. 2.

A hasp cover **133** (FIG. 2) is connected to the hasp body **122**, and this may be accomplished by providing a central opening in the hasp cover, extending the stud **128** therethrough and swaging over the end of the stud. The hasp cover is also provided with two openings to allow connecting studs **124, 124'** to extend therethrough. As previously indicated, the stud **124** may also serve as a pivot pin for the hasp plate and as a support for the spring **126**. The connecting studs **124** and **124'** are of sufficient length to permit them to be extended through openings provided in a luggage case wall so that the ends of the connecting studs may be swaged over for a firm connection of the parts.

To connect the latching assembly and integrated combination locking means A to a wall of the luggage case, the plate member C may be provided with connecting means in the form of hollow studs **134, 134'**, as shown in FIGS. 6 and 7. This enables rivets **136, 136'** to be force-fitted into the hollow studs. To provide a support for the heads of the rivets, a washer **138** may be provided to bear against the inner surface of the luggage wall **140**. The washer is provided with an opening **142** aligned with the slot **114** in the cover plate so that the lever **72** may extend therethrough. Also, and to enable sighting the visual indicators **108** on the flats, the washer **138** is provided with openings **144** in alignment with the openings **111, 115** in the back covers, as shown in FIGS. 6 and 7.

It is believed that the advantages and improved results afforded by the minimal number of components, together with the minimal number of operations involved in assembling the components, to furnish a compact latching device having associated combination locking means will be apparent from the foregoing detailed description. Various changes and modifications may be made to the preferred embodiment of the invention hereinbefore described without departing from the spirit and scope of the invention as sought to be defined in the following claims.

I claim:

1. A combination lock comprising a plate member, the outer face of the plate member having a longitudinally extending guideway, a manipulatable latching slide member positioned in the guideway, the slide member having hasp-engaging means extending from a side thereof on the underside of the plate member, cooperable means provided by the plate member and the latching slide member to limit the extent of longitudinal movement of the latching slide member in the guideway, resilient means intermediate the plate member and the latching slide member to resiliently urge the latching slide member to latched position, a plurality of longitudinally spaced slots in the front face of the latching slide member, longitudinally spaced bearings in the latching slide member on the underside thereof, a longitudinally extending shaft having the ends thereof journaled in said bearings, dials mounted on the shaft and partially extended through the slots, a flanged sleeve for each dial mounted on the shaft, the flange of each sleeve having a flat portion, cooperable means provided by each dial and its respective sleeve for keying them together, resilient sleeve-cooperable means on the shaft normally urging the sleeves into keyed relationship with their respective dials, resilient dial-cooperable means, means connected to and extending from the shaft for shifting the sleeves out of keyed engagement from their respective dials, a retainer plate connected to the underside of the latching slide member slidably related to the plate member connecting the slide member to the plate member, securing the shaft ends in their bearings and securing the resilient dial-cooperable means to the latching slide member, whereby the assembly of the shaft, dials, sleeves, resilient sleeve-cooperable means, resilient dial-cooperable means and means for shifting the sleeves are all carried by the latching slide member for movement therewith, and a back cover connected to the underside of the plate member, the back cover and the underside of the plate member providing an intermediate opening for the entry of a hasp member, the back cover having a plurality of longitudinally spaced blocking means extending therefrom for cooperation with the flanges on said sleeves, the flat portions of the flanges by-passing the blocking means to allow movement of the latching slide member, the back cover having a slotted opening to allow said means for shifting the sleeves to extend therethrough.

2. A combination lock as set forth in claim **1**, wherein the flat portion of each sleeve has a visual indicator thereon, and the back cover has aligned openings for viewing the indicators.

References Cited

UNITED STATES PATENTS

745,081	11/1903	Smith	70—304
1,583,686	5/1926	Hatch	70—316
1,583,687	5/1926	Hatch	70—312
1,606,279	11/1926	Wildrick	70—312
2,267,374	12/1941	Eber	70—312
2,512,028	6/1950	MacMillan	70—293

MARVIN A. CHAMPION, *Primary Examiner.*

R. L. WOLFE, *Assistant Examiner.*