Aug. 9, 1949. G. E. SWANSON 2,478,433

CARRYING CASE CATCH OR LOCK

Filed April 11, 1946

Fig.1

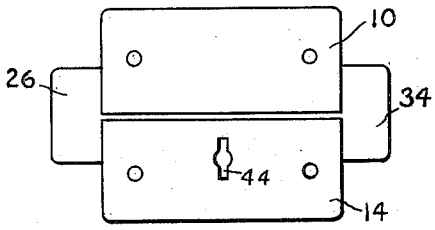


Fig.2

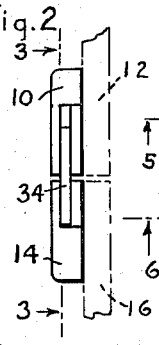


Fig. 3

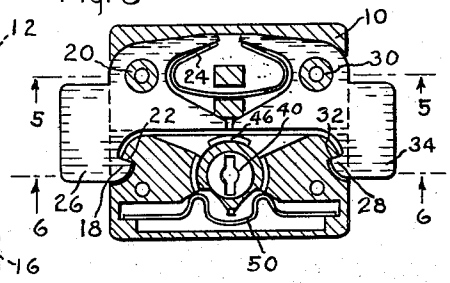


Fig.4

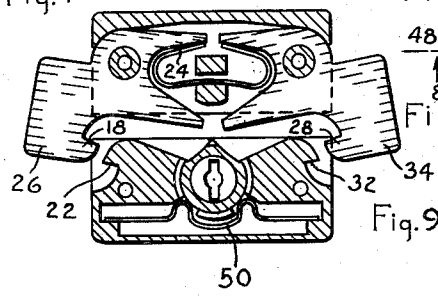


Fig.7

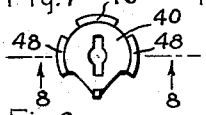


Fig.8

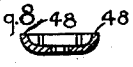


Fig. 5

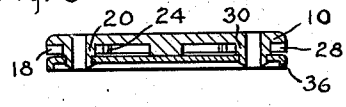


Fig.6

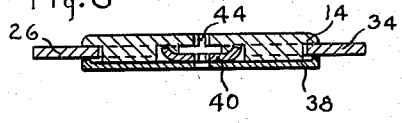


Fig.9

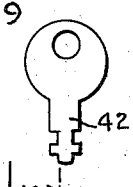


Fig.10

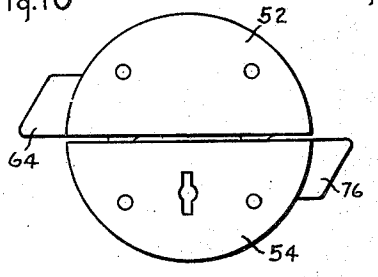


Fig.11

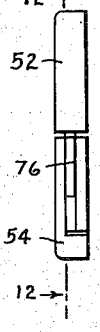


Fig.12

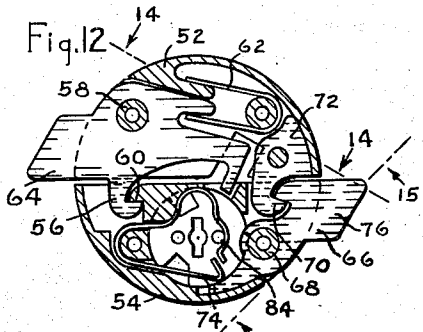


Fig.14

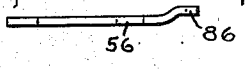


Fig.13

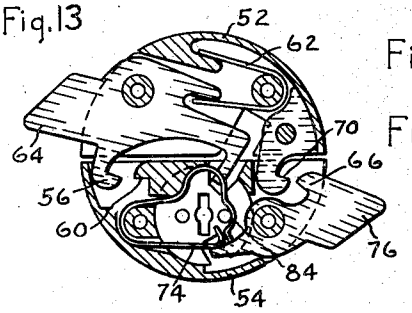


Fig.17

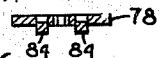


Fig.16

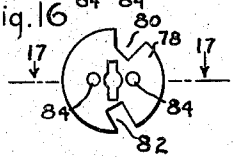
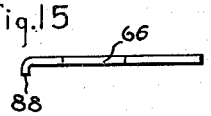


Fig.15



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CARRYING CASE CATCH OR LOCK

Gunnar E. Swanson, New Britain, Conn.

Application April 11, 1946, Serial No. 661,267

16 Claims. (Cl. 70—69)

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The invention relates to a catch or lock adapted for use on a carrying case or suitcase or trunk or chest or any other similar container. The catch or lock comprises two cooperating units, one adapted to be mounted on the body of the case adjacent the cover, and the other adapted to be mounted on the cover of the case adjacent the body.

One of the objects of the invention is to provide a simple self-latching catch having a manually engageable bolt-releasing arm so positioned that pressure applied thereto in the cover opening direction serves not only to release the bolt, but also to move the cover in the opening direction.

Another object of the invention is to provide a simple catch having two self-latching bolts and having two bolt-releasing arms adapted to be engaged by the same hand of the user so that the bolts can be released simultaneously, the said arms being so positioned that when pressures are applied thereto to move the bolts, the said pressures tend to separate the cover and the body. The two bolts may be carried by the same unit, or they may be carried one by one unit and the other by the other unit.

A further object of the invention is to provide a combined catch and lock wherein at least one bolt is carried by one unit, and wherein the lock is carried by the other unit.

A still further object of the invention is to provide a combined catch and lock wherein there are two bolts with at least one of them on one unit, and wherein the lock is on the other unit.

A still further object of the invention is to provide a combined catch and lock having two bolts, one on one unit and one on the other unit, and wherein the lock is on one of the units and serves to lock both of the bolts.

Other objects of the invention will be apparent from the following specification and claims.

In the drawing I have shown in detail two embodiments of the invention, but it will be understood that various changes may be made from the constructions shown, and that the drawing is not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawing,

Fig. 1 is a front view of a combined catch and lock embodying the invention.

Fig. 2 is a side view of the catch and lock shown in Fig. 1.

Fig. 3 is a vertical sectional view taken along the line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 3 but showing the bolts in their released positions.

Fig. 5 is a horizontal sectional view taken along the line 5—5 of Fig. 3.

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Fig. 6 is a horizontal sectional view taken along the line 6—6 of Fig. 3.

Fig. 7 is a front view of the tumbler of the lock.

Fig. 8 is a horizontal sectional view taken along the line 8—8 of Fig. 7.

Fig. 9 is a side view of a key which may be used for operating the lock.

Fig. 10 is a front view of an alternative combined catch and lock embodying the invention.

Fig. 11 is a side view of the combined catch and lock shown in Fig. 10.

Fig. 12 is a vertical sectional view taken along the line 12—12 of Fig. 11.

Fig. 13 is a view similar to Fig. 12 but showing the bolts in their released positions.

Fig. 14 is an edge view of one bolt taken in the direction indicated by the arrows 14, 14 in Fig. 12.

Fig. 15 is an edge view of the other bolt taken in the direction indicated by the arrows 15, 15 in Fig. 12.

Fig. 16 is a front view of the tumbler of the lock.

Fig. 17 is a sectional view taken along the line 17—17 of Fig. 16.

Referring to the drawing, particularly Figs. 1 to 9 thereof, there is provided a housing 10 adapted to be mounted on the cover 12 of the case immediately adjacent the body thereof. A housing 14 is provided which is adapted to be mounted on the body 16 of the case immediately adjacent the cover.

The cover unit comprising the housing 10 carries at least one movable bolt 18, which is preferably movable about a pivotal axis perpendicular to the face of the cover. As shown, the housing 10 is provided with an integral boss 20 which serves as a pivotal support for the bolt 18. The unit comprising the housing 14 is provided with a strike 22 adapted to be engaged by the bolt 18, the bolt being of hook form so as to suitably engage the strike. A spring 24 engages an inward projecting finger on the bolt 18 at the top thereof and tends to hold the bolt in its strike engaging position as shown in Fig. 3.

The bolt 18 is provided with a finger engageable arm 26 by means of which it can be moved in opposition to the spring 24 to disengage the strike 22. It will be seen that the arm 26 is so positioned with relation to the pivotal axis of the bolt 18 that pressure applied to the said arm in the bolt disengaging direction, that is, in the upward direction, serves not only to disengage the bolt from the strike, but also serves to move the cover away from the body, that is, in the opening direction.

Preferably the catch includes two bolts, and as shown in Figs. 1 to 6, both bolts are mounted on the cover unit comprising the housing 10. The

second bolt 26 is the same in construction as the bolt 18 except that it is mounted in reversed position. It is pivotally mounted on a boss 30 similar to the boss 20 and it is adapted to engage a strike 32 similar to the strike 22 and formed on the housing 14. The same spring 24 engages both bolts and tends to hold them in their strike engaging positions. The bolt 28 is provided with a finger engageable arm 34 similar to the arm 26 for moving the bolt in the disengaging direction. It will be seen that the two arms 26 and 34 are so positioned that they can be engaged simultaneously by the same hand of the user. When both arms are pressed upward the two bolts are disengaged simultaneously from their strikes and the pressures exerted on the arms to disengage the bolts also serve to move the cover in the opening direction.

The two bosses 20 and 30 on the cover unit preferably extend rearward through a rear retaining plate 36 for the unit, the rear ends of the bosses being riveted over to hold the plate. The bosses are apertured to receive rivets for attaching the unit to the cover. The body unit preferably has a rear retaining plate 38 held by similarly apertured rearward extending bosses on the housing 14.

The device preferably also includes a key operated lock, and in accordance with the invention this lock is located on the unit other than that which carries at least one of the movable bolts. When both bolts are mounted on the cover unit as shown and described, the lock is mounted on the body unit.

As shown, the lock comprises a tumbler 40 rotatable in a recess formed in the body housing 14 and the tumbler is rotatable by means of a key 42 which can be inserted through a keyhole 44 in the housing 14. The tumbler 40 is provided with a central forward extending flange 46 and with two lateral forward extending flanges 48, 48. The tumbler is releasably held in its locking position, as shown in Fig. 3, by means of a spring 50 which engages the lower edges of the flanges 48, 48. With the tumbler in this position the flange 46 is positioned beneath two inward extending fingers on the respective bolts 18 and 28, and it thus serves to prevent sufficient movement of the bolts to effect disengagement.

By means of the key 42 the tumbler 40 can be turned in either direction to the unlocking position shown in Fig. 4. In so moving the spring 50 yields to permit one of the flanges 48 and also the flange 46 to pass by it so that the flange 46 occupies the lower central position shown in Fig. 4. In this position the spring 50 engages the lower edges of the flanges 48, 48 to releasably hold the tumbler in the unlocking position. With the tumbler in the position shown in Fig. 4 the bolts are free and the user, by pressing upward on the arms 26 and 34, can swing the bolts in opposite directions to disengage them from the strikes 22 and 32. It will be seen that continued upward pressures on the arms 26 and 34 serve to move the cover in the opening direction and away from the body. As soon as the arms 26 and 34 are released, the spring 24 serves to restore the bolts to the relative positions shown in Fig. 3 but out of engagement with the strikes 22 and 32.

When the cover is returned to its closed position, the inclined surfaces on the bolts and on the strikes serve to cam the bolts outward in opposition to the spring 24 sufficiently to enable the bolts to reengage the strikes. After the bolts have been reengaged with the strikes the tumbler 40 can be turned by means of the key 42 back to the locked position shown in Fig. 3.

The alternative construction shown in Figs. 10 to 17 is in many respects similar to that shown in Figs. 1 to 9 but it differs essentially in that one of the two bolts, instead of being mounted on the cover unit, is mounted on the body unit. The housing comprising a part of the cover unit is shown at 52 and the housing comprising a part of the body unit is shown at 54. Preferably, the two housings 52 and 54 are semi-cylindrical so that they cooperate to form a complete cylinder.

The cover unit comprising the housing 52 carries a movable bolt 56 which is preferably movable about a pivotal axis perpendicular to the face of the cover. As shown, the housing 52 is provided with an integral boss 58 which serves as a pivotal support for the bolt 56. The unit comprising the housing 54 is provided with a strike 60 adapted to be engaged by the bolt 56, the bolt being of hook form so as to suitably engage the strike. The bolt 56 and the strike 60 cooperate, when engaged, to retain the cover in closed position. A spring 62 engages an inward projecting finger on the bolt 56 near the top thereof and tends to hold the bolt in its strike engaging position as shown in Fig. 12. The bolt 56 is provided with a finger engageable arm 64 by means of which it can be moved in opposition to the spring 62 to disengage the strike 60. It will be seen that the arm 64 is so positioned with relation to the pivotal axis of the bolt 56 that pressure applied to the said arm in the bolt disengaging direction, that is, in the upper direction, serves not only to disengage the bolt from the strike, but also serves to move the cover away from the body.

The body unit comprising the housing 54 carries a movable bolt 66 which is preferably movable about a pivotal axis perpendicular to the face of the body. As shown, the housing 54 is provided with an integral boss 68 which serves as a pivotal support for the bolt 66. The cover unit is provided with a strike 70 adapted to be engaged by the bolt 66, the bolt being of hook form so as to suitably engage the strike. As shown, the strike 70 is a part of a separate member 72 rigidly carried by the housing 52. The bolt 66 and the strike 70 cooperate, when engaged, to additionally retain the cover in closed position. A spring 74 engages an inward projecting finger on the bolt 66 near the bottom thereof and tends to hold the bolt in its strike engaging position as shown in Fig. 12.

The bolt 66 is provided with a finger engageable arm 76 by means of which it can be moved in opposition to the spring 74 to disengage the strike 70. It will be seen that the arms 64 and 76 are moved in opposite directions, that is, respectively upward and downward, to disengage the corresponding bolts. The two arms are so positioned that they can be engaged by the same hand of the user and when the user, after engaging the two arms, moves his hand in the clockwise direction, the two arms are moved to disengage the bolts and also to separate the cover and the body. Pressure applied to the arm 64 tends to move the cover upward and pressure applied to the arm 76 tends to move the body downward.

While not shown in the drawing it will be understood that the cover and body units may be provided respectively with rear retaining plates held in place by means similar to those already described in connection with the retaining plates 36 and 38.

The device shown in Figs. 10 to 17 preferably

also includes a key-operated lock and in accordance with the invention this lock is located on one of the units but nevertheless serves to lock both of the bolts. As shown, the lock is mounted on the body unit and it comprises a tumbler 78 positioned in a recess in the rear part of the housing 54. The tumbler 78 is essentially a flat plate with notches 80 and 82 formed therein and with forward extending projections 84, 84. The tumbler is releasably held in its locking position as shown in Fig. 12 by means of another portion of the same spring 74 which has already been referred to as biasing the bolt 66. This spring engages one of the projections 84 to releasably hold the tumbler in the position shown.

The bolt 56 has a rearward offset 86 as shown in Fig. 14 which engages the edge of the tumbler 78 when the tumbler is in the locking position as shown in Fig. 12. The bolt 66 has a rearward offset 88 which engages the edge of the tumbler 78 when the tumbler is in the locking position. Thus the tumbler serves to prevent sufficient movement of the bolts to effect disengagement.

By means of a key similar to the key 42 shown in Fig. 9 the tumbler 78 can be turned in either direction to the unlocking position shown in Fig. 13. In so moving the spring 74 yields to permit the right hand projection 84, as viewed in Fig. 12, to pass by it, and when the unlocking position shown in Fig. 13 is reached the spring engages the other projection 84. With the tumbler in the unlocking position the offset 86 on the bolt 56 can move into the notch 80 of the tumbler and the offset 88 on the bolt 66 can move into the notch 82 of the tumbler. With the tumbler in the position shown in Fig. 13 the bolts are free and the user, by pressing upward and downward on the respective arms 64 and 76, can swing the bolts in opposite directions to disengage them from the strikes 60 and 70, and continued pressure applied to the arms serves to separate the cover and the body in the manner already described. As soon as the arms 64 and 76 are released the springs 62 and 74 serve to restore the bolts to the relative positions shown in Fig. 12 but out of engagement with the strikes 60 and 70.

When the cover is returned to its closed position the inclined surfaces on the bolts and on the strikes serve to cam the bolts outward in opposition to the springs sufficiently to enable them to reengage the strikes. After the bolts have been reengaged with the strikes, the tumbler 78 can be turned by means of the key back to the locking position shown in Fig. 12.

It will be observed that in each embodiment of the invention, pressures applied to the arms for disengaging the bolts serve also to separate the cover and the body. In each embodiment the two bolts may be locked in engaging positions, the lock being carried by one unit and serving to lock at least one bolt on the other unit. In each embodiment the bolts are independently movable, the result being that the cover remains latched notwithstanding the accidental disengagement of one bolt.

What I claim is:

1. A catch for use on a carrying case or the like comprising in combination, a unit adapted to be mounted on the cover of the case adjacent the body thereof, a unit adapted to be mounted on the body of the case adjacent the said cover, a movable bolt on the cover unit engageable with the body unit to hold the cover in closed position, a movable bolt on the body unit engageable with the cover unit to hold the cover in closed position, springs tending to hold the bolts in their positions of engagement, and two arms on the respective bolts engageable by the same hand of the user for moving the bolts simultaneously to effect disengagement thereof.

2. A catch for use on a carrying case or the like comprising in combination, a unit adapted to be mounted on the cover of the case adjacent the body thereof, a unit adapted to be mounted on the body of the case adjacent the said cover, a bolt on the cover unit pivotally movable about an axis perpendicular to the face of the cover and engageable with the body unit to hold the cover in closed position, a bolt on the body unit pivotally movable about an axis perpendicular to the face of the body and engageable with the cover unit to hold the cover in closed position, springs tending to hold the bolts in their positions of engagement, and two arms on the respective bolts engageable by the same hand of the user for pivotally moving the bolts simultaneously to effect disengagement thereof.

3. A catch for use on a carrying case or the like comprising in combination, a unit adapted to be mounted on the cover of the case adjacent the body thereof, a unit adapted to be mounted on the body of the case adjacent the said cover, a bolt on the cover unit pivotally movable about an axis perpendicular to the face of the cover and engageable with the body unit to hold the cover in closed position, a bolt on the body unit pivotally movable about an axis perpendicular to the face of the body and engageable with the cover unit to hold the cover in closed position, springs tending to hold the bolts in their positions of engagement, and two arms on the respective bolts engageable by the same hand of the user for pivotally moving the bolts simultaneously in the same rotative direction to effect disengagement thereof, the said elements being so positioned with respect to the pivotal axes of the bolts that pressures applied thereto serve not only to move the bolts to effect disengagement but also to separate the cover and the body.

4. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a strike carried by one unit, a bolt mounted on the other unit and movable relatively thereto into and out of latching engagement with the strike, and means on the strike carrying unit engageable with the relatively movable bolt on the other unit to releasably hold the bolt so as to prevent relative movement thereof out of strike engaging position.

5. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a strike carried by one unit, a bolt mounted on the other unit and movable relatively thereto into and out of latching engagement with the strike, and a key operated lock on the strike carrying unit engageable with the relatively movable bolt on the other unit to releasably hold the bolt so as to prevent relative movement thereof out of strike engaging position.

6. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted

on the cover of the case adjacent the said body, a strike carried by one unit, a bolt mounted on the other unit and pivotally movable into and out of latching engagement with the strike, the said bolt having a finger that is movable toward the strike carrying unit during movement of the bolt out of latching engagement, and a key operated lock on the strike carrying unit engageable with the said finger on the bolt to releasably hold the bolt in latching engagement with the strike.

7. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a strike carried by one unit, a bolt movably mounted on the other unit and so positioned that it is engageable with the strike to hold the cover in closed position, a spring tending to hold the bolt in its strike engaging position, a finger engageable arm on the bolt for moving it in the strike disengaging direction, and a key operated lock on the strike carrying unit engageable with the relatively movable bolt on the other unit to releasably hold the bolt so as to prevent relative movement thereof out of strike engaging position.

8. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a strike carried by the body unit, a hook bolt mounted on the cover unit for pivotal movement about an axis perpendicular to the face of the cover and so positioned that it is engageable with the strike to hold the cover in closed position, a spring tending to hold the bolt in its strike engaging position, a finger engageable arm on the bolt so positioned with respect to the pivotal axis that pressure applied thereto in the cover opening direction serves not only to move the bolt in the strike disengaging direction but also to move the cover in the said opening direction, and a key operated lock on the body unit engageable with the bolt on the cover unit to releasably hold it in strike engaging position.

9. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a movable bolt carried by one of the said units, a second movable bolt carried by one of the said units, two means associated with the said units and engageable respectively by the said bolts for retaining the cover in closed position, spring means tending to hold the bolts in their positions of engagement with the said retaining means, two arms on the respective bolts engageable by the same hand of the user for moving them simultaneously in their disengaging directions, and a key operated lock on the unit other than that carrying the first said bolt and engageable with both of the bolts to releasably hold them in their engaging positions.

10. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a bolt carried by one of the units and pivotally movable about an axis perpendicular to the face on which the unit is mounted, a second bolt carried by one of the units and pivotally movable about an axis perpendicular to the face on which

the unit is mounted, two means associated with the said units and engageable respectively by the said bolts for retaining the cover in closed position, spring means tending to hold the bolts in their positions of engagement with the said retaining means, two oppositely projecting arms on the respective bolts engageable by the same hand of the user and so positioned with respect to the said pivotal axes of the bolts that pressures applied thereto in the bolt disengaging directions serve to separate the cover and the body, and a key operated lock on the unit other than that carrying the first said bolt and engageable with both of the bolts to releasably hold them in their engaging positions.

11. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a strike carried by one unit, two bolts mounted on the other unit and movable in opposite directions into and out of latching engagement with the strike, and means on the strike carrying unit engageable with the bolts on the other unit to releasably hold them in strike engaging positions.

12. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body, a strike carried by one unit, two bolts pivotally mounted on the other unit and movable in opposite directions into and out of latching engagement with the strike, and a key operated lock on the strike carrying unit engageable with the bolts on the other unit to releasably hold them in strike engaging positions.

13. The combination in a catch or lock for use on a carrying case or the like, of a strike carrying unit adapted to be mounted on the body of the case adjacent the cover thereof, a unit adapted to be mounted on the cover of the case adjacent the said body and comprising two hook bolts pivotally movable in opposite directions about axes perpendicular to the face of the cover, the said bolts being so positioned that the hooks thereof are both engageable with the strike to hold the cover in closed position, spring means tending to hold the bolts in their strike engaging positions, two oppositely projecting arms on the respective bolts engageable by the same hand of the user and so positioned with respect to the said pivotal axes that pressures applied thereto in the cover opening direction serve not only to move the bolts oppositely in the strike disengaging directions but also to move the cover in the said opening direction, and a key operated lock on the strike carrying unit engageable with both of the bolts to releasably hold them in their strike engaging positions.

14. The combination in a catch or lock for use on a carrying case or the like, of a strike carrying unit adapted to be mounted on the body of the case adjacent the cover thereof, a housing adapted to be mounted on the cover of the case adjacent the said body, two hook bolts supported in the housing for pivotal movements in opposite directions about axes perpendicular to the face of the cover, the said bolts having the hooks thereof extending toward each other and so positioned that both of them are engageable with the strike to hold the cover in closed position, spring means tending to hold the bolts in their strike engaging positions, two arms on the respective bolts pro-

jecting oppositely from the sides of the housing and engageable by the same hand of the user, the said arms being so positioned with respect to the said pivotal axes of the bolts that pressures applied thereto in the cover opening direction serve not only to move the bolts oppositely in the strike disengaging directions but also to move the cover in the opening direction, and a key operated lock on the strike carrying unit engageable with both of the bolts to releasably hold them in their strike engaging positions.

15. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the cover of the case adjacent the body thereof, a unit adapted to be mounted on the body of the case adjacent the said cover, a movable bolt on the cover unit engageable with the body unit to hold the cover in closed position, a movable bolt on the body unit engageable with the cover unit to hold the cover in closed position, springs tending to hold the bolts in their positions of engagement, two arms on the respective bolts engageable by the same hand of the user for moving the bolts simultaneously to effect disengagement thereof, and a key operated lock on one of the units engageable with both of the bolts to releasably hold them in their engaging positions.

16. The combination in a catch or lock for use on a carrying case or the like, of a unit adapted to be mounted on the cover of the case adjacent the body thereof, a unit adapted to be mounted on the body of the case adjacent the said cover, a bolt on the cover unit pivotally movable about

an axis perpendicular to the face of the cover and engageable with the body unit to hold the cover in closed position, a bolt on the body unit pivotally movable about an axis perpendicular to the face of the body and engageable with the cover unit to hold the cover in closed position, springs tending to hold the bolts in their positions of engagement, two arms on the respective bolts engageable by the same hand of the user for pivotally moving the bolts simultaneously in the same rotative direction to effect disengagement thereof, the said elements being so positioned with respect to the pivotal axes of the bolts that pressures applied thereto serve not only to move the bolts to effect disengagement but also to separate the cover and the body, and a key operated lock on one of the units engageable with both of the bolts to releasably hold them in their engaging positions.

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