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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Key-Operated Locks for Articles of Luggage

We, C. W. CHENEY & SON LIMITED of Factory Road, Birmingham 19, a British Company, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to key-operated locks for articles of luggage such as, for example, suitcases, travel bags, and portable typewriter cases, and comprising a linearly slidable bolt spring-urged into engagement with a hasp part such as a hasp loop for example.

Hitherto such a lock has had a holding plate which in one position abuts the bolt and holds it against sliding out of said engagement, and in another position is spaced from abutment with the bolt to permit sliding, the plate being rotatable by engagement of a tongue pressed up from the locking plate to form a key-engaging projection. Whilst this is satisfactory for many purposes, it has two limitations: first the strength of the key-engaging projection depends wholly on the thickness of the metal, but the pressing of the projection weakens it; secondly the height of the projection above the locking plate increases the overall thickness of the lock thus mitigating against a shallow construction.

It is an object of the invention to provide an improved lock minimising the above two limitations.

In accordance with the invention a key-operated lock for articles of luggage comprises a casing containing a linearly slidable bolt spring-urged into engagement with a hasp part, and a locking plate provided with pivot means, an aperture, and a key-engaging projection, the latter projecting into the aperture from a part of the margin thereof most remote from the pivot means.

Preferably the casing comprises front and back plates and of which one includes a pivotal post such as a rivet or plunged part which supports the locking plate pivot means.

A typical example of the invention and a modification of the example will now be more particularly described with reference to the accompanying drawings wherein:—

Figure 1 is a perspective view of the lock engaged with a hasp loop;

Figure 2 is a perspective view of the lock shortly prior to the engagement shown in Figure 1;

Figure 3 is a rear elevation of the lock, certain parts being cut away for clarity;

Figure 4 is a perspective view of components of the lock prior to their assembly together;

Figure 5 is a perspective view of the modified lock engaged with the loop of a modified hasp; and

Figure 6 is a perspective view of two components of the modified lock.

Referring to Figures 1—4 of the drawings, a lock comprises a casing consisting of front and back plates 5 and 6 which are metal pressings and are held together by four tabs 7 extending from a substantially continuous peripheral skirt 8 about the front plate 5 to secure the back plate 6 therewithin. The plates 5 and 6 define an internal cavity which opens to the exterior at one end through an aperture 9 in the skirt 8. A rectangular hole 10 in the front plate 5 opens into the cavity, and is shaped to receive a loop 11 on a hasp 12 pivoted to an attachment plate 13 for securing said hasp 12 on a lid of an article of luggage.

The cavity between the plates 5 and 6 receives a linearly slidable bolt 14 (see Figure 4) which is a metal pressing in the form of a shallow tray. The bolt 14 has a generally rectangular piercing 15 adjacent one end, and a catch portion 16 projects into the piercing 15 and points towards the other end of the bolt 14. Said other end projects through the aperture 9 and has a thickened and rounded off part 17 to facilitate manual sliding of the bolt 14 along the cavity. In one position of

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the bolt 14, as shown in dotted lines in Figure 2 and in full in Figure 3, the piercing 15 is behind the hole 10 in the front plate, and the catch portion 16 projects partly across the hole 10 to engage in the hasp loop 11. The bolt 14 is urged by a spring 18 towards said one position. In the other position of the bolt 14, as shown in full in Figure 3, which can be achieved by manual sliding against the spring 18, the catch portion 16 does not project across the hole 10 and so permits free entry and exit of the hasp loop 11 into and from the hole 10.

The spring 18 is a hairpin spring and is trapped between a lug 19 projecting inwardly of the bolt part 17, and a lug 20 upstanding from the adjacent end of a central aperture 21 in the bolt 14. The spring 18 has a free end portion which is an arcuate tail 22. The tail 22 presses against the edge of a locking plate 23, as will be described, and this urges the bolt 14 into the position where the catch portion 16 projects partly across the hole 10.

The locking plate 23 is of quadrant shape and has a pivot hole 24 adjacent the apex of the plate 23. The pivot hole 24 is engaged by a part 25 plunged from the back plate 6, and can pivot thereabout between two limits determined by lugs 26 struck up from the back plate 6. The locking plate 23 has a substantially elliptical slot 27 which is transverse of a line passing through the pivot axis and a key hole 28 in the front plate 4. Symmetrical about said line, when the locking plate 23 is in a mid-position between locking and unlocking positions, is a key-engageable projection 29 which extends inwards of the elliptical slot 27 from a part of the margin thereof most remote from the pivot hole. The tip of the ward 29 sweeps somewhat tangentially of a key bearing hole 30 in the back plate as the locking plate 23 pivots, the key bearing hole 30 being aligned into the key hole 28. The edge of the quadrant remote from the pivot hole and on the opposite side of the projection 29 to the latter has a pair of adjacent concave recesses 31 and 32 which snap engage the tail of the spring and hence hold the plate 23 in either position, but permit key-operated movement between the two positions: the said edge also includes an abutment edge 33 which registers with the lug 20 on the bolt 14 when the locking plate is in the locking position, but which clears the lug 20 when in the unlocking position, the lug 20 then registering with the adjacent recess 32.

The key hole 28 in the front plate houses the conventional top hat-shaped slotted pressing 34 which controls the cross-section of key acceptable in the lock, and the key when inserted is supported in the crown of this pressing 34 and in the key-bearing hole 30 in the back plate 6. The key insertion position is controlled by the placing of the key hole 28 in the front plate 5, so that the key bit lies

at one side of the locking plate projection 29, necessitating one complete turn of the key, of which only the last few degrees have any action, to transfer the key bit across the key slot from one side to the other and hence lock or unlock the lock. Turning of the key in the opposite direction is prevented by the projection 29, and hence a positive locking and unlocking action is provided.

The strength of the projection 29 depends merely on its thickness, and so can readily be as strong as required. The projection 29 does not increase the lock thickness other than the metal thickness alone.

Referring now to Figures 5 and 6 of the drawings, the lock shown therein differs from the lock described above principally in that it is reversed with respect to the hasp 12 with the part 17 of the bolt 14 adjacent the attachment plate 13, as can be seen in Figure 5. As a consequence the hasp 12 is apertured at 40 to permit access to the pressing 34 for locking of the lock, has its sides further cut away as at 41 to receive the lock, and is recessed at 42 for convenience in lock operation; the attachment plate 13 is recessed at 43 to accommodate said part 17.

With reference to Figure 6, the lock is modified by having an aperture 44 in the skirt 8 of the front plate 5 opposite the aperture 9. This permits access to the bolt 14 at its end portion 45 opposite to the part 17 and exposed even when the catch portion 16 is engaged with the hasp loop 11. Said end portion 45 is bent outwardly through the aperture 43 and through the plane of the front plate 5 so that it can be manually displaced against the action of the spring 18 to move the catch portion 16 out of the position projecting partly across the hole 10.

The effect of the modification is that the bolt 14 can be manually pulled *downwardly* away from the hasp part by the end portion 45 of the bolt 14 to release the hasp loop 11 in contrast to being manually pushed *upwardly* towards the hasp part by the part 17 to release the hasp loop 11. This has certain advantages, particularly when the suitcase is of light construction.

WHAT WE CLAIM IS:—

1. A key-operated lock for articles of luggage comprising a casing containing a linearly slidable bolt spring-urged for engagement with a hasp part, and a locking plate provided with pivot means, an aperture, and a key-engaging projection, the latter projecting into the aperture from a part of the margin thereof most remote from the pivot means.

2. A key-operated lock according to claim 1 wherein the casing comprises front and back plates at which one supports the locking plate pivot means.

3. A key-operated lock according to claim 2, wherein parts project from one of the



the bolt 14, as shown in dotted lines in Figure 2 and in full in Figure 3, the piercing 15 is behind the hole 10 in the front plate, and the catch portion 16 projects partly across the hole 10 to engage in the hasp loop 11. The bolt 14 is urged by a spring 18 towards said one position. In the other position of the bolt 14, as shown in full in Figure 3, which can be achieved by manual sliding against the spring 18, the catch portion 16 does not project across the hole 10 and so permits free entry and exit of the hasp loop 11 into and from the hole 10.

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at one side of the locking plate projection 29, necessitating one complete turn of the key, of which only the last few degrees have any action, to transfer the key bit across the key slot from one side to the other and hence lock or unlock the lock. Turning of the key in the opposite direction is prevented by the projection 29, and hence a positive locking and unlocking action is provided.

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2. A key-operated lock according to claim 1 wherein the casing comprises front and back plates at which one supports the locking plate pivot means.

3. A key-operated lock according to claim 2, wherein parts project from one of the



plates to act as abutments limiting pivotal movement of the locking plate.

5 4. A key-operated lock according to any of the preceding claims wherein the edge of the locking plate remote from the pivot means includes an abutment edge for abutment when the locking plate is in the locking position with a lug upstanding from the bolt to prevent movement thereof out of engagement with the hasp part.

10 5. A key-operated lock according to claim 4 wherein said edge of the locking plate also includes a pair of adjacent concave recesses for co-operation with the bolt spring to tend to hold the locking plate in either the locking or unlocking position.

15 6. A key-operated lock according to claim 5 wherein the recess alongside the abutment edge is disposed to receive the lug upstanding from the bolt when the locking plate is in the unlocking position.

20 7. A key-operated lock according to claim 5 wherein the spring is retained in position by the lug upstanding from the bolt, is a hairpin spring, and has a free arcuate tail for co-operation with the concave recesses.

8. A key-operated lock according to claim 2 and any other claim wherein the front plate rotatably mounts a key-locating pressing in line with the aperture and a key-bearing hole in the back plate. 30

9. A key-operated lock according to any of claims 1—8 wherein an end of the bolt can be manually pushed towards the hasp part to locate the bolt in a position disengaged from the hasp part. 35

10. A key-operated lock according to any of claims 1—8 wherein an end of the bolt can be manually pulled away from the hasp part to locate the bolt in a position disengaged from the hasp part. 40

11. A key-operated lock for articles of luggage constructed and arranged substantially as herein described with reference to and as shown in Figures 1—4 or 5 and 6 of the accompanying drawings. 45

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