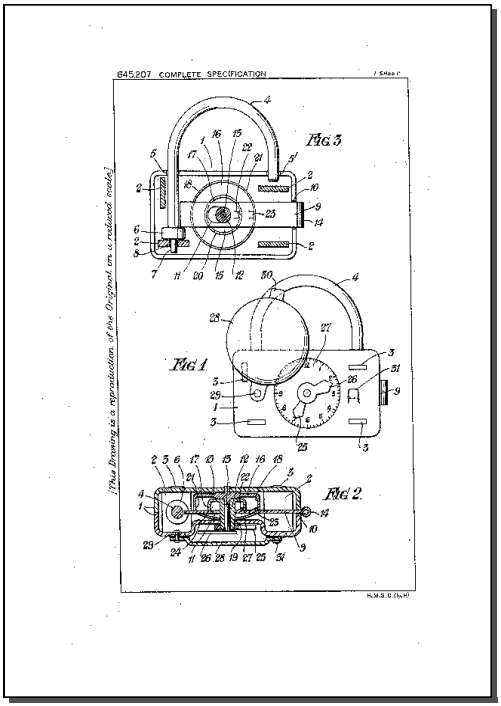

Drawing pages of GB645207 A

Espacenet

Description: GB645207 (A) — 1950-10-25

Improvements relating to keyless locks

Description of GB645207 (A)

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements relating to Keyless Locks I, VINCENT DAWE, a British Subject, of 93, Belgrave Road, Ilford, Esosex, do hereby declare the nature of this invention to be as follows: This invention concerns improvements relating to keylelss locks and has for one of its objects to, provide a simple but effective and widely applicable lock of the combination type.

According to the invention, a lock of this type consists of discs or wheels rotatably mounted in a casing and each having an inwardly Eloping flange with a gap, a locking member guided diametrically of the said discs or wheels and having projections engageable with the flanges but capable of passing through the gaps, and means outside the casing for turning the discs and for identifying the positions in which the hidden flange gaps will permit the projections on the locking member to pass.

Preferably the last named means comprises hands, like minute and hour hands of a clock, movable over clock figures on the face of the caosing and connected by sleeves to respective discs The sleeves are freely rotatable one on the other and on a central post fixed in the back of the go casing Over this post is disposed a small spring and a washer and then the two nested discs separated by a washer, the smaller disc being carried by the outer sleeve The two discs are retained upon 3 S the post in anly

convenient manner, for example by the casing or by a securing pin through the end of the post.

The locking member may take the form of a pin or bolt having a flat stem part of tempered spring steel guided by means of a longitudinal slot near its centre, over the outer sleeve It is also guided in a slot in the casing or a separate guiding pillar The projections may take the form of teeth attached to, or punched up from the locking member so as to point outwardly and towards the adjacent end of the said member The shape of the external part of the locking member will depend upon the purpose of the lock It 50 may have a knob or ball for operational purposes at one end and a plain.

notched or slotted part at the other end for engagement with a coacting recess OT other lock part or with an attachment fi of some kind such ads a loop, slot or recess in a bar, or it may be of U-shape as in an ordinary padlock or cycle lock Alternatively the locking member may be arranged to serve as a bolt to an attach 60 ment inserted through an aperture in the casing or as a block to opening movement of an ordinary spring clasp For instance, the locking member might obstruct the press-button or slide-disc of 66 a handbag or briefcase clasp It may also be used with tagsecuring means for a sliding clasp fastener or with trunk locks, chain and bar fittings and so forth.

With the gaps in the flanges in 70 register wifh the projections, the hour and minute hands are fixed upon the sleeves of the inner and outer discs in positions, in relation to the clock-face, corresponding to a given time which is allocated to 75 the particular lock as its "combination".

The number of possible combinations, suitably one for every 5 minutes of the twelve hours, will depend upon the width of the gaps As high a degree of 80 security as is required can be achieved.

If desired, number or letter combinations may be used instead of the time combination.

Assuming that the lock is open, the 85 locking member can be re-engaged with the discs in any position, as the projections are permitted to ride over the flanges by virtue of the direction of the slope and fthe lift permitted by the springy sfem of 90 the said member Once they have dropped inside the flanges, however, the locking member can be released only when the gaps in the flanges have been brought into register with the projections by cor 95 rectly setting the combination The lock may be made wholly of metal or may have a dial of, say, thermoplastio 1 1 1'_ ' 645,207 material It' may be provided with a hinged and, if desired, transparent protective cover.

Dated the:30th day of January, 1948.

JENSESN & S Ofa, i 7, Chancery Lane, London AW- C 2.

Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements relating to Keyless Locks 1, XINCENT D &WE, a British Subject, of 6 93, Belgrave Road, Ilford, Essex, do lhereby declare the nature of this invention and in what manner the same is to lie performed, to be particularly described and ascertained in and by the fof Towi L' 1 LO statement: -

This invention concerns improvements relating to keyless combination locks of the kind comprising discs or wheels rotatably mounted in a casing and each having a flange with a gap, a bolt or other locking member guided substantially diametrically of the said discs or wheels and having projections engageable with the flanges but capable or passing through the gaps, and means outside the casing for turning the discs or wheels and for identifying the positions in which the hidden flange gaps will permit the projections on the locking member to pass.

According to the invention, in a lock of the kind set forth, the locking member and the discs or wheels are resiliently and yieidably pressed together axially of the discs or wheels and the projections and, or ho the flanges are sloped or bevelled in the direction to permit the projections to ride over the flanges in the return movement of the locking member, but not in its unlocking movement With this arrangement the locking member can be returned to the locked condition with the discs or wheels in any position.

The lock according to the invention is simple and eftective and capable of wide application.

A preferred embodiment of the invention will now be described by way of example and with reference to the accompanying drawing, in which:4 o Fig 1 is a front elevation; Fig 2 a horizontal section; and Fig 3 a vertical longitudinal section.

This embodiment illustrates the application of the invention to a padlock The padlock has a casing 1 in two ha-ves connected together by cross-pieces 2 whose reduced ends 3 are upset or rivetted over the outside The U-shaped loop 4, which is guided in holes 5, 51 in the casing, is 66 provided with a collar 6 which, in the closed condition of the padlock, rests upon the lower left-hand cross-piece 2 Also, a locating projection 7 engages in a hole 8 in this cross-piece In the locked condition of the padlock, the loop 4 is held in the position shown in Fig j bv the engaaement of the end of a bolt 9 ' over tile collar 6 In the unlocked condition of the padlock, the one arm of the loop can be drawn out from the hole a' and 65 swung about the other ann, the amount to which the loop ean be withdrawn being limited by the engagement of the collar 6 with the uipper left hand cross piece 2.

The bolt 9, vhich is of flat flexible 70 material for exa mpie: tempered spring steel, is guided in a slot 10 in she cabinged and, byo, means of a longniudinal slot it, over a sleeve 12 This sleeve is rotatably mounted in the front of the easing and 76 upon a spindle or pin 1:3 which is itself rotatably mounted in the back of the easing The end of the bolt 9 which projeets from the casing is formed or provided with an operating loop or knob 14 6 t Integral with or fixed upon the sleeve 12 and spindle 1 U 3 are nested discs 15, 16 with inturned flauges 17, i S, the disc 16 being larger than the disc 15 The disc assembly is held in position in the casing 86 bcy means oi a slight shoulder 19 on the hileeve 12 'Ihe flanges 117, 18 have narrow gaps 20, 21 respectively The bolt 9, which lies diametrically of the discs 1.5, 16, is formed or provided with prty PO jections 22, 2 > 3 on the face towards the flanges 17, 18 As shown, these pro Htions take the form of teeth punched uji from the bolt 9 so as to point towards its outer end The bolt is pressed up affairst 9,5 the edges of the flanges by a spri.

washer 24 abutting against the inside OI the front of the easing 1.

The bolt 9 can be drawn out to release the loop 4 only when the gaps 20, 21 in 100 the

flanges 17, 18 are in line with the projections 22 i, 23, the gaps being ci,> wide enough to allow the projections to pass To permit of the identification of the disc positions in which this will occur 10 i the sleeve 12 and spindle 1:3 have fixed on them hand-s 25, 26, like the hour and minute hands of a clock, movable over clock figures or similar markings on the front face of the casing To protect the 110 hands, this part 27 of the casing is recessed and provided with a -swivelling cover 28 pivoted at 29 and having a lug :30 enirageabfle in a catch 31.

With the gaps 20, 21 in register with 115 the projections 22, 23, the hands 25, 26 a-re fixed upon the sleeve 12 and spindle 645,207 13 in positions, in relation to the clockface 27, corresponding to a given time which is allocated to the particular lock as its 'combination" The number of possible combinations, suitably one for every one, two' and a half or five, minutes of the twelve hours, will depend upon the width of the gaps As high a degree of security as is required can be achieved.

If desired, other number or letter coinbinations may be used instead of the time combination.

The bolt 9 can be re-engaged with the flanged discs 13, 16 in any position, as the projections 22, 23 are permitted to ride over the flanges 17, 18 by virtue of the direction of the slope on the back of the projection and the give permitted by the spring washer and /or the flexibilitv of the said bolt Once the projections are inside the flanges (Fig 2), however, the bolt can be released only when the gaps 20, 21 have been brought into register with the projections 22, 23 by correctly setting the combination.

The lock may be made wholly of metal or may have a dial of, say, thermoplastic material The protective cover 28, which may alternatively be hinged or slidable on the casing 1, can be made of transparent material.

Various modifications may be made without departing from the invention:

If desired, both discs may be carried on sleeves which are freely rotatable one on the other and on a central post fixed in the back of the casing A spring may be arranged behind the discs which may be retained upon the post by the casing or a pin through the post the bolt may be replaced by a pin having a flat stem part guided over the outer sleeve and in a slot in the casing or a pillar therein The flanges on the discs may be arranged to slope inwardly towards the axis, or their edges may be bevelled off on the outside.

The invention may be applied to locks other than padlocks, the shape and arrangement of the external locking part, s O provided in place of the loop 4, depending upon the purpose of the lock For a cycle lock, a longer loop may be provided.

The bolt or locking member may also iserve to secure, or block the release of, other forms of lock or clasp parts For instance, 55 the bolt or other locking member may obstruct the press-button or slide disc, of the spring clasp of a handbag or briefcase It may also be used with tag-securing means for a sliding-clasp fastener or 60 with trunk locks, chain and bar fittings and so forth In some cases, the bolt or other locking member may itself be integral with or attached to the loop or other external locking part It may then have 65 a knob or the like for its manipulation at one end and a plain, notched or slotted part at the other end for engagement with a slot, recess, loop or other formation in a co-acting lock part or attachment 70 Having now particularly

described and ascertained the nature of my said invention and in what manner the same is to be