No. 757,265. PATENTED APR. 12, 1904.

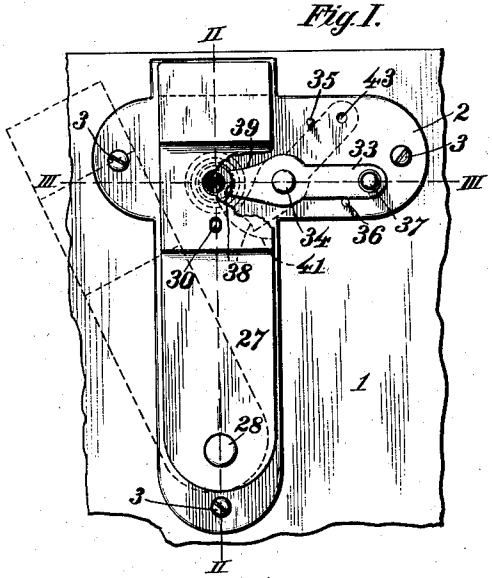
J. S. CAMPBELL.

LOCK.

APPLICATION FILED JAN. 16, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. I.



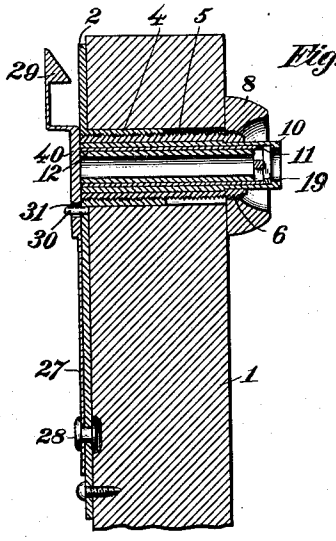


Fig. II.

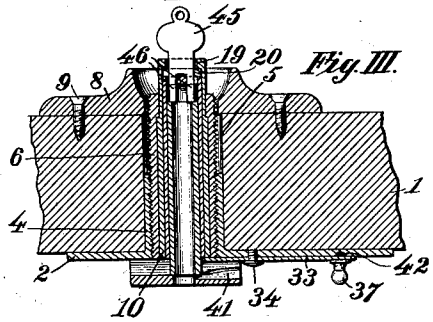


Fig. III.

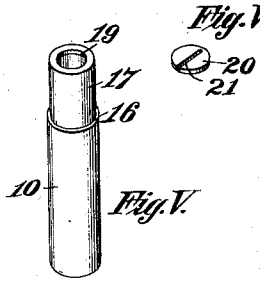


Fig. V. Fig. VI.

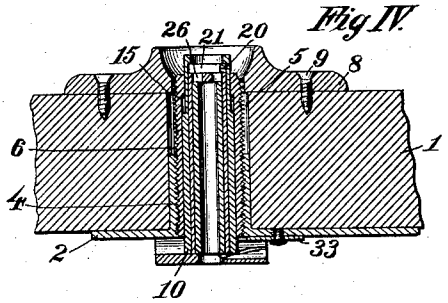


Fig. IV.

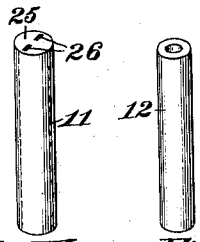


Fig. VII. Fig. VIII.

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No. 757,265. PATENTED APR. 12, 1904.

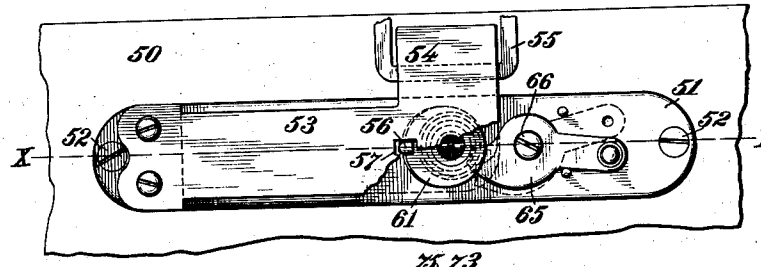
J. S. CAMPBELL.

LOCK.

APPLICATION FILED JAN. 16, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. IX.



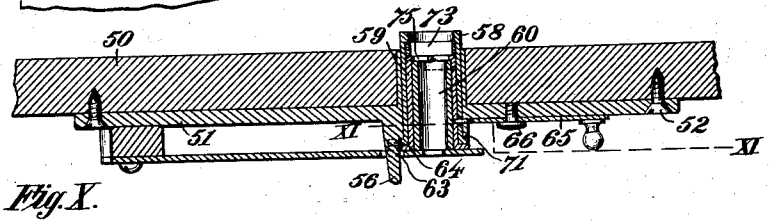


Fig. X.

Fig. XI.

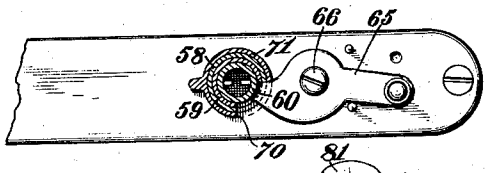


Fig. XII.

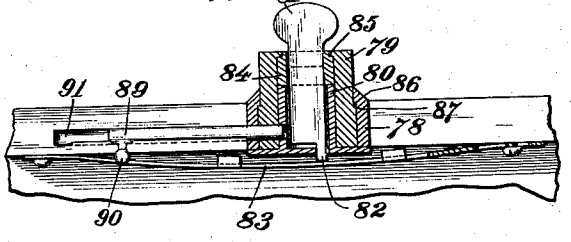


Fig. XIV.

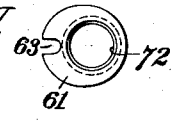


Fig. XIII.

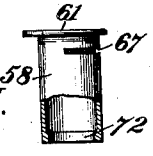


Fig. XV.

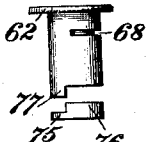


Fig. XVI.



Fig. XVII.



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No. 757,265. Patented April 12, 1904.

UNITED STATES PATENT OFFICE.

JOHN SMALLEY CAMPBELL, OF LONDON, ENGLAND.

LOCK.

SPECIFICATION forming part of Letters Patent No. 757,265, dated April 12, 1904.

Application filed January 16, 1903. Serial No. 139,280. (No model.)

To all whom it may concern:

Be it known that I, JOHN SMALLEY CAMPBELL, a citizen of the United States of America, residing at London, England, have invented certain new and useful Improvements in Locks, of which the following is a specification.

The object of my invention is to produce improvements in locks adaptable to any of the articles to which locks or latches are usually applied—such as boxes, drawers, cabinets, portmanteaus, and bags, as well as cigarette and cigar cases, purses, and the like—which besides being adapted to perform the ordinary functions of a key-lock are also provided with means of ready conversion into an ordinary spring push-fastening.

My invention consists of such members and combinations, as will hereinafter be described in detail in the specification and succinctly set forth in the appended claims.

In the accompanying drawings, Figure I is a plan view of one of my locks in a preferred form of embodiment for application to a desk or the like, showing a portion of the spring-catch broken away to exhibit the latch illustrated in the actuating-member-engaging position in full lines and in the disengaging position in dotted lines and also showing in dotted lines the spring-catch swung laterally out of place in the manner provided for manipulation of the actuating member. Fig. II is a section on the line II II of Fig. I. Fig. III is a section on the line III III of Fig. I, showing the key-actuated member of the actuating member in operative position under manipulation of a key. Fig. IV is a view similar to Fig. III, save that the actuating member is actuated as a push-fastening, the necessity of the key shown in Fig. II being dispensed with by the setting of the latch into the position illustrated of it in dotted lines in Fig. I. Fig. V is a perspective view of the outermost tube of the actuating member. Fig. VI is a similar view of the slotted disk or keyhole-guard, which when assembled with the tube shown in Fig. V fills and is confined within the end thereof. Fig. VII is a perspective view of the keyhole or intermediate tube of the actuating member. Fig. VIII is a perspective view of the innermost constituent of the actuating member. Fig. IX is a view similar to Fig. I, showing a modified form of embodiment of my invention. Fig. X is a section on the line X X of Fig. IX, some of the parts being shown in elevation. Fig. XI is a partial sectional view on the line XI XI of Fig. X. Fig. XII is a side elevation, partly in section, of a further modification of my invention on a magnified scale, showing that form of embodiment thereof which is specially applicable to light articles intended for pocket use—such, for example, as a cigarette-case. Fig. XIII is a side elevation, partly in section, of a modified form of outermost actuating-member tube. Fig. XIV is an end view of the subject-matter of Fig. XIII. Fig. XV is a plan view of the intermediate actuating-member tube to correspond to that shown in Fig. XIII. Fig. XVI is a perspective view of the modified disk plate or keyhole-guard which constitutes a separable part of the tube shown in Fig. XV, wherein it is also illustrated. Fig. XVII is a view of the innermost tube which is assembled with the tubes shown in Figs. XIII and XV to complete an actuating member.

Referring to the numerals on the drawings, 1 indicates by way of illustration a fragment of a desk or other article to which certain forms of embodiment of my invention are applicable.

In Figs. I to IV, inclusive, of the drawings a lock is shown as comprehending a frame-plate 2 of general though irregular cross-shape. The shape of plate illustrated is non-essential.

3 indicates screws representative of means for securing the frame-plate to the article to which it is practically applied. The plate 2 is preferably provided with a hollow projection 4, designed to enter and to snugly fit an aperture 5, provided for it in the article 1, to which the lock under description is applied. The projection 4 may of course be of a length substantially coextensive with the thickness of the object 1; but I prefer as a means of rendering the same plate applicable to articles of different thicknesses to make it extensible. To that end the projection 4 may be

made in two parts by the addition of an extension 6. The members 4 and 6 may be, if cylindrical, threaded together or the tubes may be united by a fitment or telescoped. In either case the plate may be in the first instance provided with an extension 6 of maximum length, which when adjusted to fit the individual article 1, to which said plate is to be applied, is cut off and may be permanently united to the plate, as by sweating or soldering the members 4 and 6 together.

8 indicates an escutcheon secured, as by screws 9, about the end of the extension or corresponding member 6. The projection 4, whether employed singly or in connection with an extension-piece 6, is designed to accommodate and afford a case for a multiplex actuating member, preferably a nest of tubes or plurality of tubes fitting snugly one within the other. The actuating member, as well as the several parts which compose it, may be of any preferred angular or curvilinear contour in cross-section and to its shape should conform the internal contour of the case aforementioned which holds it. The cylindrical form of contour in cross-section is illustrated in the drawings.

I illustrate the plurality of members constituting the actuating member above referred to as three in number, which they are by preference. Said three members comprehend, preferably, an outermost tube 10, an intermediate or keyhole tube 11, and an innermost tube, cylinder, or key-actuated member 12. Provision should be made for readily assembling the parts of the actuating member within its case by slipping the actuating member into the case through the opening into the case in the frame-pate 2. It is designed that the actuating member should be readily inserted into or withdrawn from the case through the opening in the frame-plate, since in that way provision is made for changing the combination of the lock; but the parts of the actuating member and the actuating member itself should be secured against accidental or intentional disassemblage from without. As a convenient means of accomplishing that end I provide upon the actuating member case near its outer extremity an inwardly-extending constriction bounded by a shoulder 15, and upon the tube 10 a counterpart shoulder 16, defining the one end of the reduced portion 17 of the tube 10, which fits within the constricted portion of the cartridge-case. The tube 10 in turn is provided for a like purpose with an internally-projecting flange 19, against which the adjacent end of the tube 11 might abut. In practice, however, I prefer to employ between the end of the tube 11 and the flange 19 an intermediate slotted disk or guard-plate 20, the slot therein being indicated by the reference-numeral 21. The tube 11 in turn is closed at its outer end with a head 25, provided with a keyhole or keyholes 26 of any preferred shape. The key-actuated member 12, which may be a tube or a solid rod, as preferred, abuts snugly against the head 25 of the tube 11. The assembled actuating member and case above specified are clearly shown in Fig. II, for example, wherein it also appears that the inner ends of the several members of the actuating member when assembled and at rest in normal position are all flush with the surface of the plate 2. It might, therefore, be readily inferred, but may be specified, that if the projection 4 be extensible in the manner previously set forth the several parts of the actuating member should be made originally of a length to correspond with that of the maximum length of the member 6 and that all should be cut down to the proper respective lengths after the necessary adjustments are made.

Against the face of the plate 2 I provide a flat spring 27, which, pivoted as indicated at 28 near one end to the plate 2, is provided at the other with a suitable catch-head 29, which through motion to and from the plate may coöperate therewith to constitute a locking member, or, specifically, through the operation of the resilient power of the spring-plate 27 a spring-catch. The spring 27 extends in normal contact with the face of the plate 2 across the opening of the case therein. It thereby supports the reciprocal function of holding the actuating member yieldingly in place within its case, as shown in Fig. II, and of being in turn actuated against the resilient force of the spring 27 through the longitudinal movement within its case of the actuating member or any part thereof.

The spring 27 is held in the position last described against unintentional movement upon its pivot 28, as by a stud-pin 30, projecting from the plate 2, working in a slot 31, elongated endwise of the spring 27, the elongation of the slot providing for the functional operation of the catch-head 29, in which the spring 27 terminates. If force be applied to the catch-head 29 sufficient to clear the walls of the slot 31 from the pin 30, the spring 27 may then be turned freely upon its pivot 28, as indicated in dotted lines in Fig. I.

It is obvious from the foregoing description that the mechanism of my device, so far as it has been specified hitherto, is adapted through pressure upon the end of the tube 10, projecting as it does in Fig. II, to actuate the catch-head 29. So far as specified, therefore, the mechanism constitutes practically a form of push-fastening device.

It is to accommodate the mechanism specified to the performance of the functions of a lock as well as of a push-fastening that this invention is in part devised. To accomplish that end, I provide means for restraining all but the innermost member of the actuating member from endwise movement, employing for the purpose the latch, detent, or dog 33,

pivoted, as indicated at 34, to the face of the plate 2 and swinging between stop-pins 35 and 36 thereon, as illustrated in full and dotted lines in Fig. I. The dog 33 is provided at one end with a knob or handle 37 and at the other with two curved faces 38 and 39. The face 38 is shaped and located, so that only the tube 12 may fairly clear it when the dog is set in the dogging position, as shown in full lines in Fig. I. On the other hand, the face 39 is shaped so that when the dog is set in the position illustrated in dotted lines in Fig. I it clears the entire actuating member and permits it to operate precisely as if no dog were present—in other words, as a push-fastening.

The spring 27 adjacent to the catch-head 29 is made of thickened material, as indicated at 40 in Fig. II of the drawings, in order to accommodate the undercut 41 for the sweep of the nose of the dog, as indicated in Fig. I of the drawings. The dog being made of resilient metal and with an inwardly-projecting button 42, formed upon the inner end of the shank of the knob 37, as shown in Fig. III, is adapted through engagement with shallow recesses or depressions 43 in the face of the plate 2 to remain fixed against accidental dislodgment in either of the two positions to which it is designed to be shifted, as shown in Fig. I. In that figure one of the recesses 43 is illustrated, the other corresponding recess being covered by the dog.

It was above specified that when the dog is in the position shown in full lines in Fig. I it serves to prevent endwise movement of all but the innermost part of the actuating member. That member is designed to be actuated exclusively by a key 45. (See Fig. III.) The key illustrated is of the simplest form, designed solely to illusirate the principle of my invention, and has a pair of legs 46 to fit the keyhole 26, which the legs readily reach by a slight twist of the key, if necessary, after they are inserted into the slot 21 of the guard-disk 20. Passing through the keyhole 26 the legs 46 impinge against the innermost part 12 of the actuating member, which by endwise pressure upon the key readily drives the catch-head 29 against the resistance of its spring 27.

The guard-disk 20, with its slot 21, the plurality of apertures constituting a single keyhole 26, and the bifurcated key are offered as mere suggestions of a practically infinite variety of means by which the picking of the lock may be guarded against.

Any of the usual means employed for securing one movable member to another in locks or any suitable means which may be devised for the purpose are contemplated as applicable to my invention in the broad scope here illustrated, wherein are shown only the movable members and one form of locking mechanism of the simplest kind.

Through the swinging of the dog 33 to the position shown in dotted lines and of the spring similarly shown in Fig. I of the drawings it is practicable to withdraw the actuating member from its case and to substitute another therefor without the use of any tools and without having to draw any screws. In this way provision is made for the ready change of the combination of the locking mechanism. One mode of changing such combination may be in changing the shape or configuration of the keyhole, illustrated as carried within the intermediate part 11 of the actuating member, such change, of course, involving a change of the guard-plate 20. Accordingly, in the modification illustrated in Figs. IX to XI, inclusive, of the drawings, supplemented by the detail views, XIII to XVII, I show a device for changing the keyhole without change of the entire tube which carries it. I also illustrate in said modification modified means for assembling and dogging the parts of the actuating member, including, incidentally, means for preventing rotative movement of said parts.

Referring to the figures last designated, 50 indicates a portion of an article to which the lock is secured; 51, the frame-plate secured thereto, as by screws 52; 53, a spring-plate carrying a catch-head 54, with which a portion of a striking plate or hasp 55 is shown engaged. 56 indicates a stud projecting from the plate 51 through an oblong aperture 57 in the spring 53. The actuating member is made up of an outermost part 58, an intermediate part 59, and an innermost part 60, like the actuating member already specified; but the outermost and intermediate parts thereof are provided with eccentric flanges 61 and 62, respectively, each of which is provided with an outwardly-opening notch 63 and 64, respectively, adapted and designed to engage the stud 56 in the assembled device. A dog 65, pivoted to the frame-plate 51, as indicated at 66, is adapted to retain or release all but the innermost part of the actuating member at the will of the operator. The dog 65 being substantially identical with the dog 33, previously specified, there appears to be no occasion to respecify structural details already described, except to specify them by reference to the dog 33. The dog 65, however, instead of covering and uncovering the ends of the parts of the actuating member, as the dog 33 does, works in slits 67 and 68, provided for it in the members 58 and 59, respectively, rendered accessible through a slit 70 in the actuating-member case 71, that is preferably made integral with the plate 51.

The end of the member 58 is provided with an internally-constrictive flange 72, designed to retain a slotted guard-plate 73, against which abuts a keyhole-disk 75, that is operatively secured to the intermediate part of the actuating member 59. The keyhole-disk 75, although operatively secured to the member

59, is not in the modified form of embodiment of the invention under description made integral therewith, but is provided with a mutilated collar 76, which makes joint with the stepped end 77 of the member 59. (Compare Figs. XV and XVI.)

To one skilled in the art it will be obvious from the foregoing description that when the parts are assembled the members 58 and 59 are irrevolubly fixed by the engagement of their notches 63 and 64 with the stud 56. When engaged by the dog 65, as shown, for instance, in Fig. XI, they are immovable lengthwise; but the innermost member 60 may be actuated by a proper key and by its end thrust displace the spring 53, thereby releasing the catch-head 54 and the hasp 55. When released from the dog, the same operation may be effected by pressure applied against the projecting end of the member 58, which when so released operates as a push-fastening.

In the form of embodiment of my invention last specified the shape of the keyhole may be varied at will by simply changing the guard-plate 73 and the keyhole-disk 75.

In Fig. XII of the drawings I illustrate a form of embodiment of my invention especially adapted for light articles, such as cigarette-cases. Referring thereto, 78 indicates the case, 79 the outermost part of the actuating member, and 80 the intermediate part thereof. The innermost member is omitted; but its place is supplied by the key 81, provided with a tang 82, which operatively impinges against the spring fastening-plate 83. 84 indicates a slotted guard-plate secured within the member 79 by an inwardly-projecting flange 85 thereof. The member 79 is in turn secured within its case 78 by an inwardly-projecting flange 86, engaging with its shoulder 87. 89 indicates a sliding dog provided with a handle 90 and adapted to engage or disengage the members 79 and 80 at will by means of registering apertures in the parts 78, 79, and 80, respectively, as illustrated. When the dog 89 is in the dogging position illustrated in Fig. XII, the device becomes a key-actuatable lock; but when the dog is slipped back to the end of its guideway 91 it becomes a push-fastening.

The mode of operation of my invention in the various forms of embodiment thereof herein illustrated and described is deemed to have been sufficiently set forth in the foregoing specification, except that it may be added, perhaps to advantage, that the dog in each instance is located in a position to be non-accessible from the outside of the article secured by the lock when said article is closed or in the locked position and that by that means the obviously necessary provision may be made for putting the setting of the locking mechanism exclusively within the control of the holder of a key thereto.

What I claim is—

1. In a lock, the combination with a frame-plate, case, spring-actuated locking member, and a member confined within the case by the locking member and movable endwise therein to actuate the locking member.

2. In a lock, the combination with a frame-plate, case, spring-actuated locking member, and a member confined within the case by the locking member and movable endwise therein to actuate the locking member, and means for permitting the moving the locking member out of the way so as to liberate the member within the case at will.

3. In a lock, the combination with a frame-plate, locking member, and multiplex actuating member, of means for restraining the movement of a portion only of said actuating member, whereby the operation of the several parts of the actuating member may be variously controlled.

4. In a lock, the combination with a frame-plate, locking member, and multiplex actuating member, of means for preventing direct manipulation of the actuating member, and a key for operating a part of the actuating member.

5. In a lock, the combination with a frame-plate, locking member, and actuating member, of mechanism for restraining the movement of the outermost part of said actuating member and means for actuating the locking member through the end thrust of a key adapted to be inserted into said outermost part.

6. In a lock, the combination with a frame-plate, locking member, actuating member and case, any part of which actuating member may singly actuate said locking member, of means for restraining the movement of a portion but not all of the actuating member, whereby a variety of means for actuating the locking member may be employed.

7. In a lock, the combination with a frame-plate, actuating member and case, of a spring-actuated locking member removably confining the actuating member within the case.

8. In a lock, the combination with a frame-plate, locking member, multiplex actuating member and case, the actuating member or any part thereof constituting means for actuating the locking member, of means permitting operative substitution of one actuating member for another within the case at will.

9. In a lock, the combination with a frame-plate, locking member, multiplex actuating member and case, the actuating member comprising an innermost key-actuated part, an outermost part, and an intermediate guard-plate.

10. In a lock, the combination with a frame-plate, locking member, multiplex actuating member comprising a plurality of parts operatively related to the locking member, of a

dog adapted to retain or release at will a portion of the actuating member, whereby the actuating member may be operated as a push-fastening or a key-actuated device at will.

11. In a lock, the combination with a frame-plate, locking member, multiplex actuating member comprising outermost, innermost and intermediate parts, of means for dogging the outermost and intermediate parts, and a detachable keyhole-disk upon the intermediate part, through which the innermost part is operatively accessible to a key.

12. In a lock, the combination with a frame-plate, locking member, and multiplex actuating member, said actuating member comprising rotatable and non-rotatable parts, of means for operating the rotatable part by a key inserted through the non-rotatable part.

13. In a lock, the combination with a frame-plate, locking member, actuating member, of a dog upon the plate coöperating with the actuating member in the manner and for the purpose specified, and means for fixing the dog against accidental dislodgment in either the dogging or the clearing position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN SMALLEY CAMPBELL.

Witnesses:

ALFRED NUTTING,

H. D. JAMESON.