

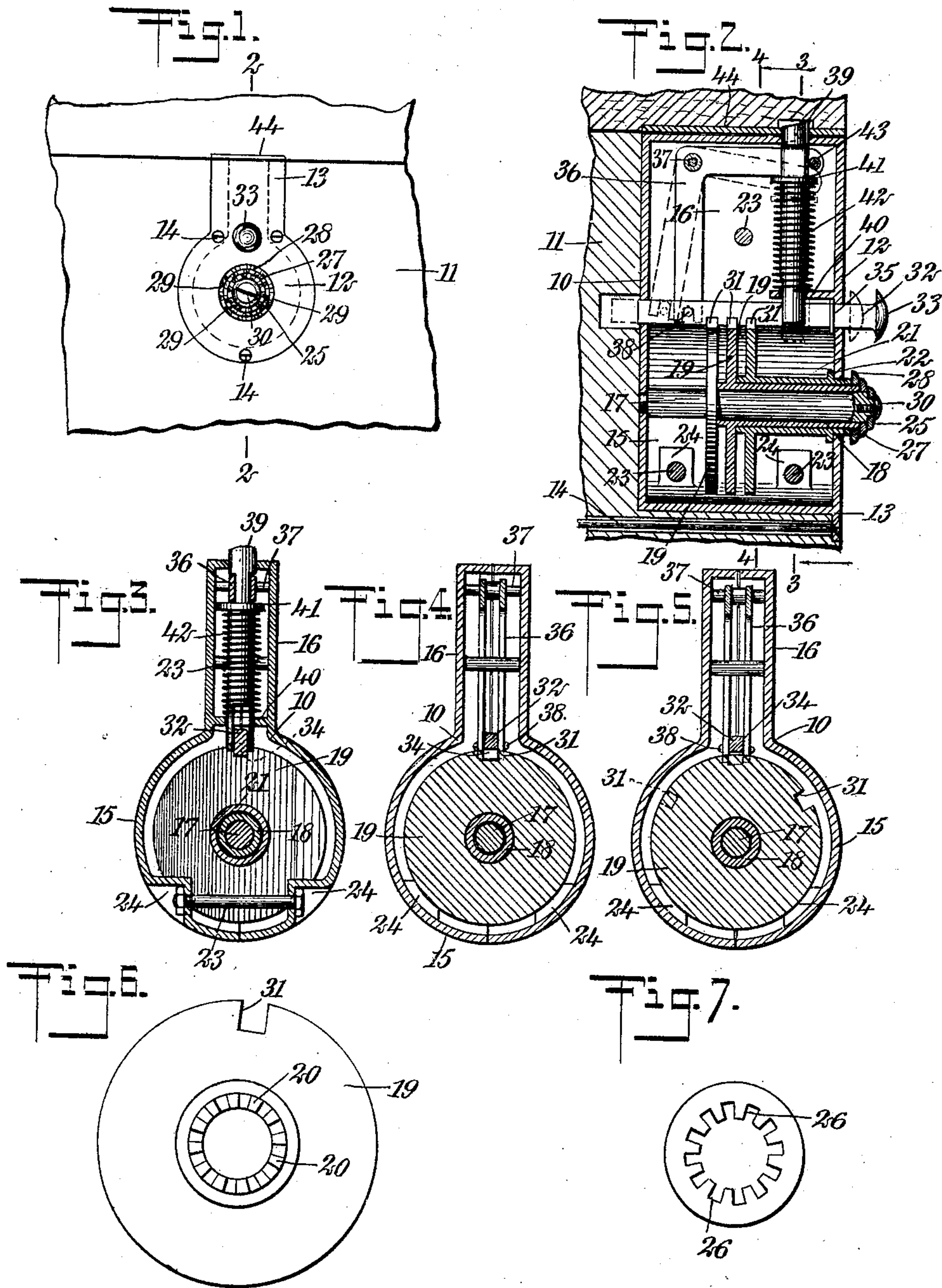
W. J. LAMBERT & E. P. DOPPS.

LOCK.

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925,199.

Patented June 15, 1909.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## LOCK.

No. 925,199.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed March 18, 1908. Serial No. 421,798.

*To all whom it may concern:*

Be it known that we, WALTER J. LAMBERT and ELSWORTH P. DOPPS, both citizens of the United States, and residents, respectively, of North Yakima, in the county of Yakima and State of Washington, and of Sunnyside, in the county of Yakima and State of Washington, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

This invention relates to locks, and more particularly to combination or permutation locks having normally projecting locking bolts, and dials which are adjustable to alter the combinations or permutations of the locks.

More specifically, the invention relates to a lock having a locking bolt which is normally resiliently projected, a member movable in the direction of its length and controlling the locking bolt, a plurality of rotatable disks having openings which, when aligned, permit the movement of the member, and a plurality of combination or permutation dials, each controlling one of the disks, the dials being adjustable independently of one another to allow the combination or permutation of the lock to be varied.

An object of the invention is to provide a simple, strong and durable combination or permutation lock which is inexpensive to manufacture, which can be easily operated, and which it is practically impossible to unlock without destroying the lock, unless the proper combination or permutation is known.

A further object of the invention is to provide a lock of the class described, which can be operated to unlock by means only of the proper combination or permutation, the locking bolt of which can be withdrawn when the lock is properly set, by moving a releasing member in the direction of its length, and in which the combination or permutation dials themselves, are adjustable to permit the varying of the combination or permutation.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of refer-

ence indicate corresponding parts in all the views, and in which—

Figure 1 is a front elevation of the lock applied to a desk or other drawer, and showing the dials; Fig. 2 is an enlarged longitudinal section on the line 2—2 of Fig. 1; Fig. 3 is a transverse section on the line 3—3 of Fig. 2; Fig. 4 is a transverse section on the line 4—4 of Fig. 2; Fig. 5 is a view similar to Fig. 4, showing one of the parts in a different position; Fig. 6 is an enlarged front elevation of one of the locking-bolt-controlling disks; and Fig. 7 is a rear elevation of one of the dials.

Before proceeding to a more detailed explanation of our invention, it should be clearly understood that while the same is particularly useful in connection with spring drawers for desks and the like, in which it is necessary to have the locking bolt normally projected, it can also be advantageously employed for other purposes to which locks of this character are adapted. In most combination or permutation locks it is necessary to take the lock apart in order to vary the combination by suitably altering the relative positions of certain of the parts. With our lock, however, the combination or permutation can be altered by merely adjusting the dials with respect to one another. These dials have the combination or permutation graduations engraved or otherwise indicated thereon, and serve the usual purpose in setting the lock to open it. When the lock has been properly set, the locking bolt can be withdrawn by moving a member in the direction of its length. The member projects from the lock casing and has formed at the end, a push-button. It will be understood that unless the proper combination or permutation is used, the member cannot be moved, and consequently, the locking bolt cannot be released.

Referring more particularly to the drawings, we provide a lock casing 10, which is preferably mounted in a suitable recess of the desk-drawer 11, or other device to which the lock is applied. At the outside of the drawer or other structure, the lock casing has a face-plate 12, preferably flush with the outer surface of the drawer and having a flange 13 secured to the drawer by means of screws or bolts 14 or in any other convenient manner. The casing comprises a



lower substantially cylindrical portion 15, and integral therewith, an upper portion 16 of substantially rectangular cross section, and of less width than the diameter of the 5 cylindrical portion. The casing is formed in halves which are secured together by means of screws or bolts 23. The cylindrical portion of the casing, near the lower side, has inwardly disposed parts 24 which 10 present flat faces for the engagement of the bolt heads, as is shown most clearly in Fig. 3.

Arranged longitudinally of the cylindrical portion 15 of the casing is a pintle 17, having one end constructed and journaled in an 15 opening at the back of the casing. The other end of the pintle 17 extends through a suitable opening of the face plate 12 of the casing. A sleeve 18 is mounted upon the pintle 17 and is free to move thereon. 20 Near one end, the sleeve 18 has a rigid disk 19, and at the other end has a plurality of substantially radial teeth or projections 20. The end of the sleeve provided with the teeth 20 projects through the opening in the 25 face-plate 12. A second sleeve 21 is movably arranged upon the first sleeve 18 and near one end has a similar disk 19. The opposite end of the sleeve 21 projects through the opening in the face-plate 12 and 30 has teeth or projections 20. The sleeve 21 has a collar 22 abutting against the inner side of the face-plate and limiting the projection of the sleeve from the casing. A further disk 19 is rigidly carried by the 35 pintle 17 and engages at the end of the sleeve 18. The disks 19 are separated a uniform distance, as those carried by the sleeves 18 and 21 are mounted thereon a short distance from the ends of the sleeves, 40 as is shown most clearly in Fig. 2.

The projecting end of the pintle 17 is provided with peripheral recesses which form teeth 20. A dial 25 having a substantially 45 central opening having inner peripheral recesses 26 formed to receive the teeth 20, is mounted at the end of the pintle. A second dial 27 having recesses 26 to receive the teeth 20, is mounted at the end of the sleeve 18. A further dial 28, having recesses 26 50 which receive the teeth 20, is mounted at the end of the sleeve 21. The dials 25, 27 and 28, increase successively in size and have indicated thereon, combination or permutation graduations 29. A screw 30 fits 55 into a suitably threaded recess at the outer end of the pintle 17 and has the head formed to engage the dial 25 to hold the dials, which overlap, in place. The disks 19 controlled by the dials, have peripheral recesses 31 for 60 a purpose which will appear hereinafter.

An elongated member 32 is movably arranged in openings of the casing and projects through the face-plate of the latter. 65 At the projecting end, the member 32 has a head 33 forming a push-button. The mem-

ber is preferably of substantially rectangular cross-section and is formed to move through the recesses 31 of the disks 19, when these recesses are alined. The member has transverse edge openings 34 which permit 70 the disks to be rotated independently of the member. A collar 35, rigid with the member 32 limits the projection thereof from the lock casing.

A double bell crank lever 36 is pivoted by 75 means of a suitable pin 37 within the upper portion 16 of the casing, and has the lower extremities arranged at each side of the member 32. These lower extremities are bifurcated and straddle studs 38 projecting 80 from the sides of the member, whereby the latter controls the lever.

A locking bolt 39 is arranged within the portion 16 of the casing, at substantially right angles to the member 32, and is mov- 85 able in the direction of its length. The locking bolt has the upper end projecting through an opening of the casing, and is suitably beveled. The opposite end of the locking bolt is slidably carried by an in- 90 ward extension 40 of the casing. It has a rigid collar 41, and carries a helical spring 42 which engages the extension 40 and the collar 41, normally to project the bolt. The 95 end of the lever 36 remote from the member 32, extends at each side of the locking bolt and is pivotally secured to an ear of the latter by means of a pin 43.

When the edge recesses 31 of the disks 19 are not in alinement, that is, when the com- 100 bination of the lock is not properly set, the member 32 cannot be moved in the direction of its length. By setting the combination, the recesses 31 are alined and the member 32 can be pushed into the casing by means of 105 its push-button head 33. When this is done, the lever 36 is swung about its pivot pin 37, and the locking bolt is thereby withdrawn into the lock casing against the tension of the spring 42, and will be held in this in- 110 operative position as long as the member 32 is held displaced. When the latter is released, the spring will again project the locking bolt and return the lever and the member 32 to their normal positions. The 115 locking bolt 39 coöperates with a locking plate 44 having a lug or recess to engage the bolt.

By turning the dials 25, 27 and 28, the disks 19 can be adjusted to aline their edge 120 recesses 31 to permit the unlocking of the device. Unless the proper combination is known, however, it is extremely difficult to set the lock to permit its opening, without breaking or otherwise injuring it. In order 125 to vary the combination, the screw 30 is removed and the dials 25, 27 and 28 are successively withdrawn from the ends of the pintle 17 and the sleeves 18 and 21, respectively. They can then be replaced in dif- 130



ferent positions with respect to the pintle and the sleeves, and to each other. The number of the teeth 20 on the pintle and on the sleeves, and the number of the recesses 26 of the dials will, preferably, correspond to the number of graduations on each of the dials.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In a lock of the class described, a locking bolt, a member movable in the direction of its length, a lever operatively connecting said member and said locking bolt, resilient means for normally projecting said locking bolt, a plurality of disks having edge recesses, said edge recesses when alined, permitting the movement of said member to withdraw said locking bolt, said member having recesses permitting the rotation of said disks when said member is in a normal position, a plurality of sleeves rigid with said disks, said sleeves, at the ends, having teeth, dials, each having recesses adapted to receive said teeth, whereby said dials can be adjustably mounted at the ends of said sleeves, and means for holding said dials in position on said sleeves.

2. In a lock of the class described, a casing, a pintle rotatable within said casing and projecting therefrom, a sleeve movable on said pintle, a second sleeve movable on said first sleeve, said pintle and said sleeves having rigid disks provided with edge recesses, said pintle and said sleeves at the projecting ends having teeth, dials having recesses formed to receive said teeth whereby said dials can be adjustably mounted at the ends of said pintle and said sleeves, a member movable in the direction of its length and having recesses permitting the rotation of said disks, said member being movable when said edge recesses of said

disks are alined, a locking bolt within said casing, resilient means for normally projecting said bolt from said casing, and a lever pivoted within said casing and connecting said bolt and said member, said member projecting from said casing and having a head for permitting its manual operation.

3. In a lock of the class described, a casing having a cylindrical portion, and extending therefrom a second portion of angular cross section, a locking bolt in said second portion, a member movable in the direction of its length, means for operatively connecting said member and said bolt, means for normally projecting said bolt, a plurality of disks rotatable within said cylindrical portion and having edge recesses, said edge recesses when alined permitting the movement of said member to operate said bolt, said member having recesses permitting the rotation of said disks when said member is in a predetermined position, and a plurality of cooperating dials having combination graduations indicated thereon and controlling said disks.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER J. LAMBERT.

Witnesses to the signature of Walter J. Lambert:

JAMES O. CULL,

CAROLINE DWINELL.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELSWORTH P. DOPPS.

Witnesses to the signature of Elsworth P. Dopps:

O. L. SMITH,

HENRIETTA DOPPS.