

O. M. LARKIN.
COMBINATION LOCK.
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916,334.

Patented Mar. 23, 1909.

Fig. 1.

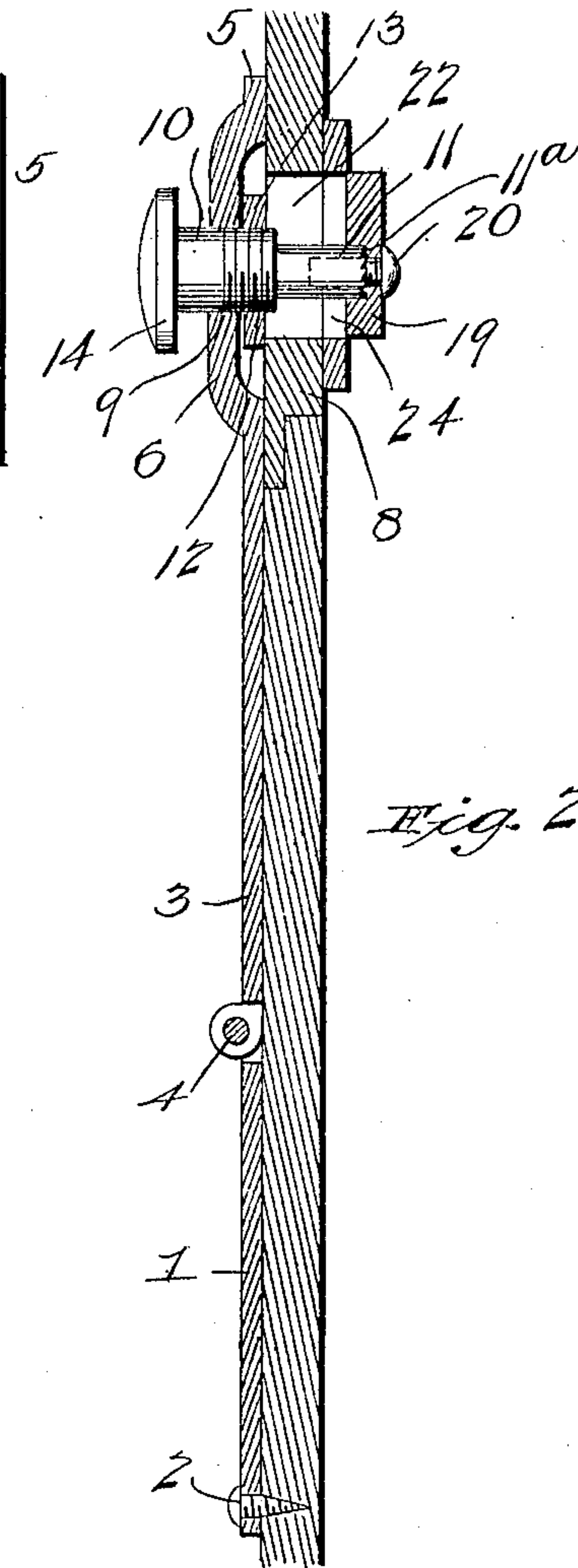
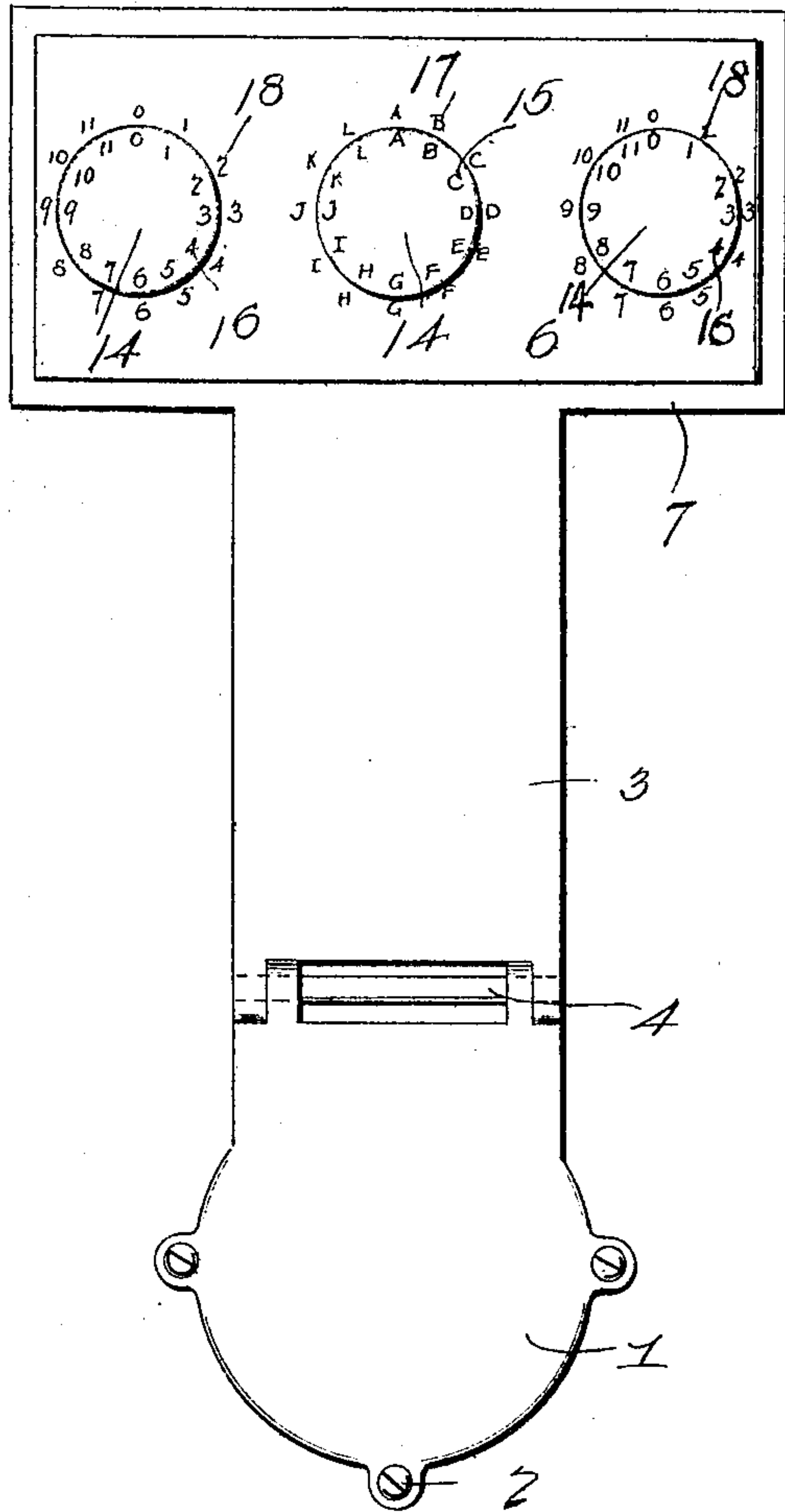
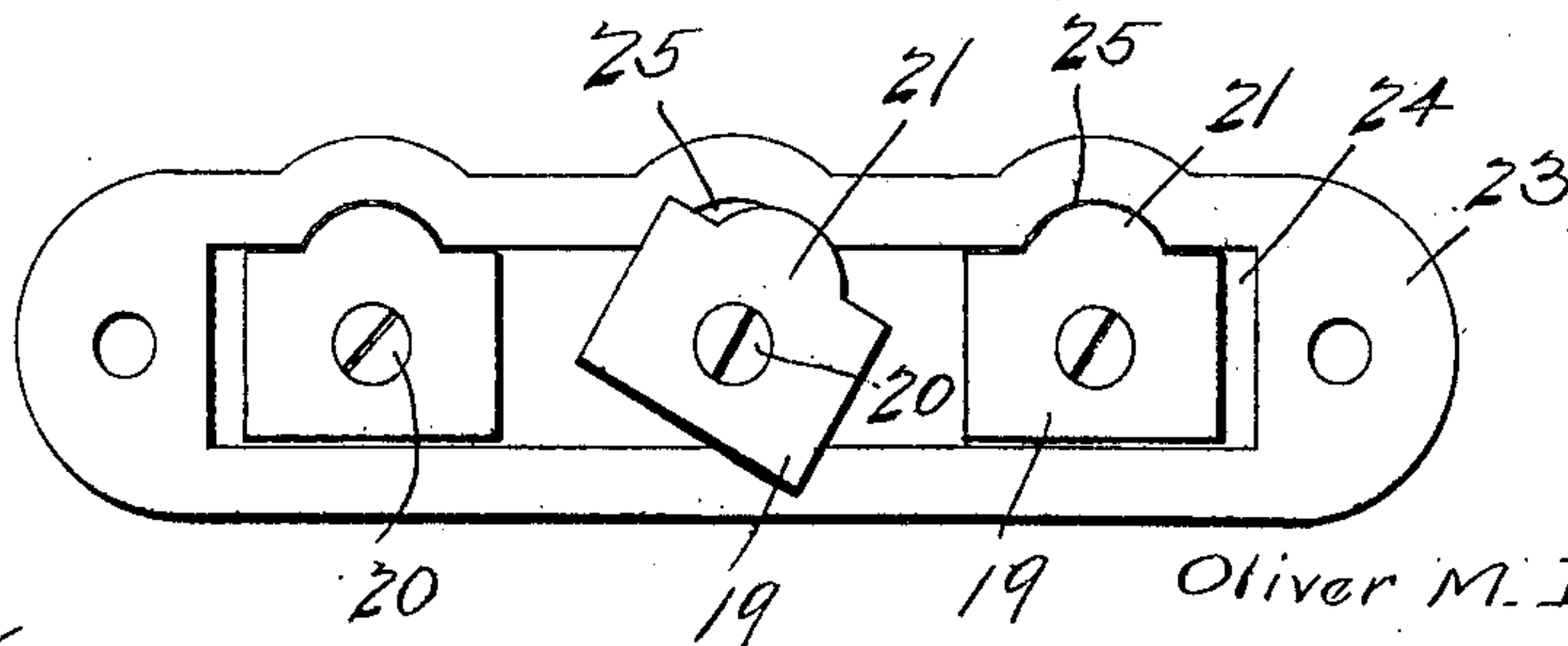


Fig. 2.

Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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COMBINATION-LOCK.

No. 916,334.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OLIVER M. LARKIN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented new and useful Improvements in Combination-Locks, of which the following is a specification.

This invention relates to combination locks, adapted for use in connection with trunks and for other purposes wherein it will be found applicable; and the object thereof is to provide a lock which will compel a person to be thoroughly familiar with the combination to enable the opening of the lock when occasion so requires.

A further object of the invention is to provide a lock for the purpose set forth with a plurality of latch members each independently adjustable with respect to the other, thereby enabling the combination of each latch member to be different from another so that it will be extremely difficult for any one unless familiar with the combination to open the lock when occasion so requires.

Further objects of the invention are to provide a lock for the purpose set forth which shall be simple of construction, strong, durable, efficient in use, ready of attachment to a trunk or other receptacle, or to a door, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings, wherein like characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a front view of a lock in accordance with this invention; Fig. 2 is a sectional view, and, Fig. 3 is a rear elevation

of the latch plate, also showing the latch members.

Referring to the drawings, 1 denotes a hasp-attaching-plate which is shown by way of example as being secured to the front of a trunk as at 2.

3 denotes a hasp which is hinged to the plate 1 as at 4, and has its free end terminating in an enlarged rectangular portion 5 which is offset as at 6, forming a flat marginal bearing portion 7 which, when the lock is closed, is adapted to bear against the lid 8 of the trunk.

The offset portion 6 is formed with a plurality of openings 9, as shown three in number, but which may be increased or diminished as occasion so requires. Extending through each of the openings 9 is an operating shaft of two different diameters the portions of which are indicated respectively 10, 11. The portion 10 is screw-threaded, as at 12, and is engaged by a disk or washer 13, which is adapted to be positioned in close proximity to the inner face of the offset portion 6, and the function of which is to prevent the pulling of the operating shaft through its opening 9. The outer end of the operating shaft carries a finger piece or button 14 provided with a series of letters or a series of digits, or both. In Fig. 1 one of the finger pieces 14 is shown provided with a series of letters, as at 15 and the other finger pieces 14 are shown as provided with a plurality of digits as at 16. The letters 15 associate with a series of letters 17 formed upon the offset portion 6 and the two series of digits each associate with a like number of series of digits 18 provided upon the offset portion 6. The letters and digits constitute indicating means or dials for determining the adjustment of the latch members to be hereinafter referred to.

The reduced portion 11 of each of the operating shafts carries on its inner end a shouldered latch member 19 which is adjustably connected thereto through the medium of the set screw 20 engaging in the inner end of the operating shaft. Each of the latch pieces is substantially rectangular in contour and has a portion of the top thereof formed in a semi-cylindrical manner as at 21.

The end of the reduced portion 11 is formed with a series of teeth 11^a adapted to engage in teeth formed on the member 19, to prevent the latter from turning. The teeth 11^a on the latch member 19 correspond in number to the number of the digits or letters forming a dial. From such construction it is evident that when the set screw 20 is seated in the reduced portion 11 and thereby causes the two series of teeth to interlock, that the latch member will be fixed upon the shaft so that the former will be prevented from moving. When adjusting the latch member the screw 20 is unscrewed a portion of its length so that the teeth of the member will be moved out of engagement with the teeth of the shaft. The member can then be set to the desired position and the screw 20 driven home, and, owing to the engaging of the teeth upon the shaft with the teeth of the member the latter will be retained in its adjusted position.

The trunk lid 8 is formed with a rectangular opening 22 to permit of the passage thereof of the latch members 19 when it is desired to release the lid of the trunk so that the latter can be opened, and upon the inner face of the lid 8 is secured a latch plate 23 having a rectangular opening 24 with the top wall thereof cut away in a curvilinear manner as at 25 so as to conform to the semi-cylindrical portion 21 of the latch member.

The opening through the lid 8 conforms to the opening through the latch plate 23.

When it is desired to lock the lid 8 to the body portion of the trunk the hasp 3 is swung upwardly and the latch members 19 are so positioned as to pass through the openings 22 and 24. Each of the operating shafts is then given a slight turn so as to cause each of the latch members to be positioned at an angle in a manner as shown by the adjusted latch member in Fig. 3. By such an arrangement one upper and one lower corner, as well as a part of the semi-cylindrical portion 21 of the latch member, engage the back of the plate 23. Consequently it will be impossible to unlock the lid 8 unless the latch member is moved to its original or normal position so that it can pass through the opening 22 formed in the lid.

Owing to the manner in which each of the latch members can be adjusted with respect to its dial it is evident that it will be somewhat difficult for the operating shaft to be manipulated so that the latch members can be pulled through the openings 22 and 24.

The adjustment of one latch member with respect to its dial may be different from the other latch member or members with respect to its dial which will offer additional difficulties to prevent the latch members being po-

sitioned so that they can be pulled through the openings 22 and 24. When the latch members are shifted to locking position they span the opening 24 in a manner as shown by the single adjusted latch member in Fig. 3.

A lock in accordance with this invention provides means for securing two elements together to prevent their being unlocked unless the operator is thoroughly familiar with the combination of the lock and by providing a plurality of latch members it is evident that the device cannot be unlocked unless all of the latch members are moved to inoperative position or so that they will all assume the same position, such position being to enable all of the latch members to be pulled through the openings 22 and 24 so that the hasp 3 can be lowered.

What I claim is—

1. A lock comprising a latch plate having a rectangular opening with one wall thereof formed of a plurality of curvilinear portions, a plurality of latch members adapted to pass through the opening in the latch plate and each having the top thereof conforming in contour to that wall of the opening having the curvilinear portions, an operating shaft for each of said members, and a supporting means for the operating shafts.

2. A lock comprising a latch plate having a rectangular opening with one wall thereof formed of a plurality of curvilinear portions, a plurality of latch members adapted to pass through the opening in the latch plate and each having the top thereof conforming in contour to that wall of the opening having the curvilinear portions, a plurality of operating shafts, means for adjustably connecting said latch members to the inner ends of said shafts, supporting means for the shafts, said supporting means provided with a plurality of dials, and finger pieces upon the outer ends of the shafts, said finger pieces provided with dials associating with the dials upon the supporting means.

3. A lock for the purpose set forth comprising an operating shaft, supporting means therefor, a latch plate having an opening, said shaft having its inner end formed with teeth, and an adjustable latch member carried by the shaft and having teeth adapted to mesh with the teeth of the shaft, thereby maintaining said latch member in its adjusted position, said latch member when the shaft is shifted being adapted to span the opening in the latch plate, thereby preventing the passage of the shaft and member through the opening in the latch plate, combined with means for limiting the longitudinal movement of the shaft in one direction.

4. A lock for the purpose set forth comprising operating shafts, supporting means

therefor, a latch plate having an opening, an adjustable latch member detachably connected to each shaft and adapted, when the shafts are shifted in one direction to straddle
5 the opening in the latch plate, thereby preventing the passage of the shafts and members through the opening in the latch plate, combined with a washer mounted upon each

shaft to limit the movement in one direction thereof through the said supporting means. 10

In testimony whereof, I affix my signature in presence of two witnesses.

OLIVER M. LARKIN.

Witnesses:

M. R. HENDERSON,
R. H. BROUGHTON.