No. 691,942. Patented Jan. 28, 1902.

H. D. HIBBARD.

DUPLEX LOCKING MECHANISM FOR SAFES OR VAULTS.

(Application filed July 27, 1901.)

(No Model.) 4 Sheets—Sheet 1.

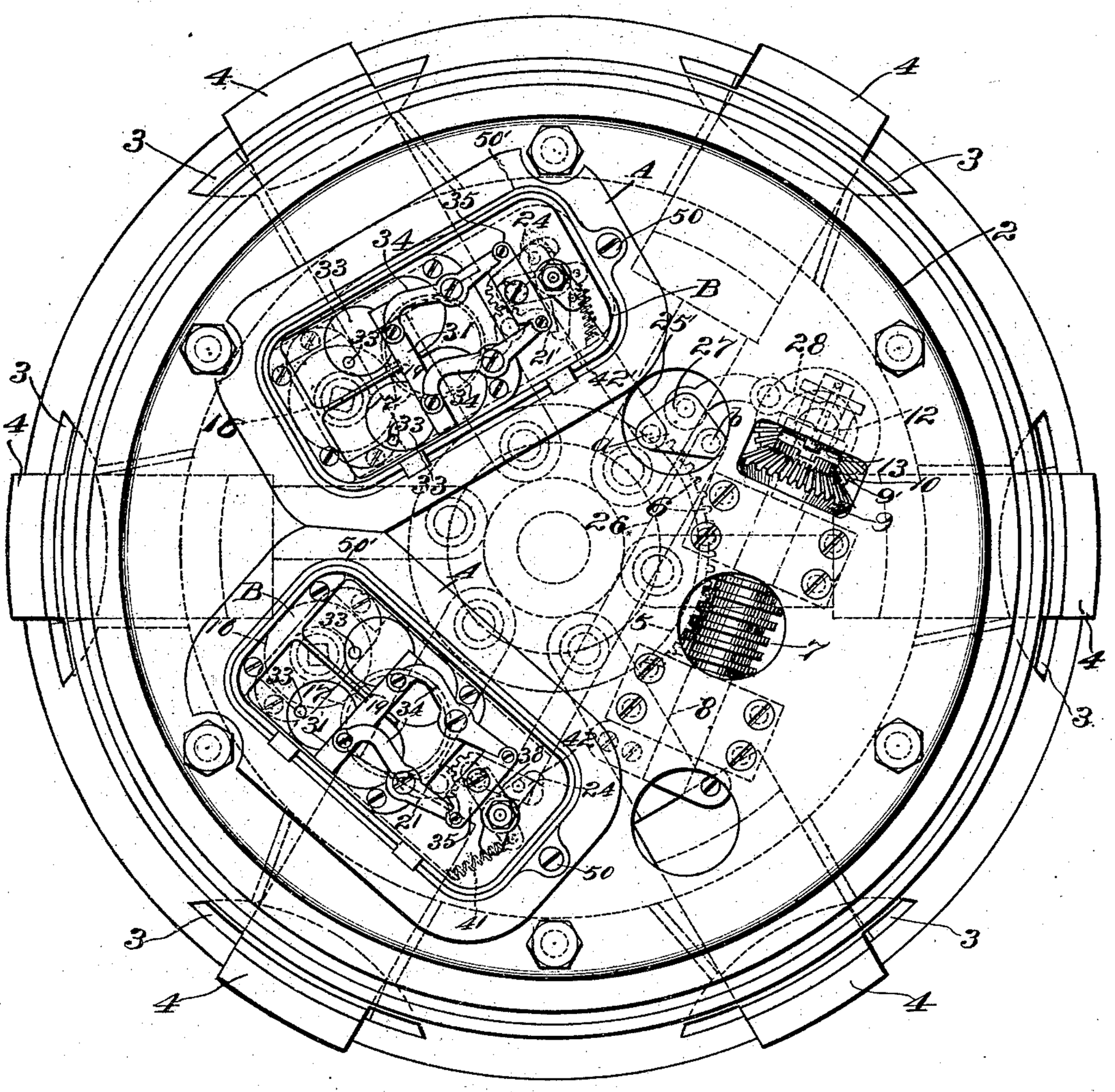

Fig. 1.

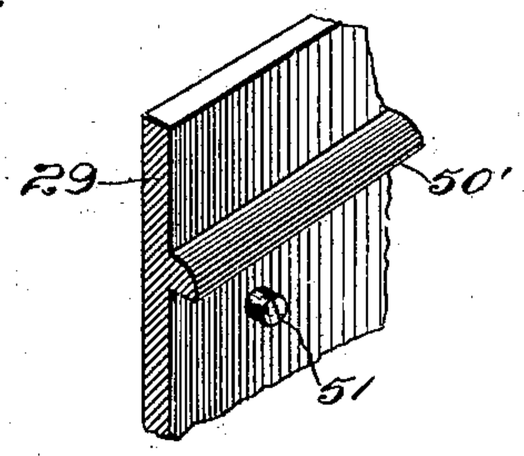

Fig. 7.

Witnesses:
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(No Model.) 4 Sheets—Sheet 2.

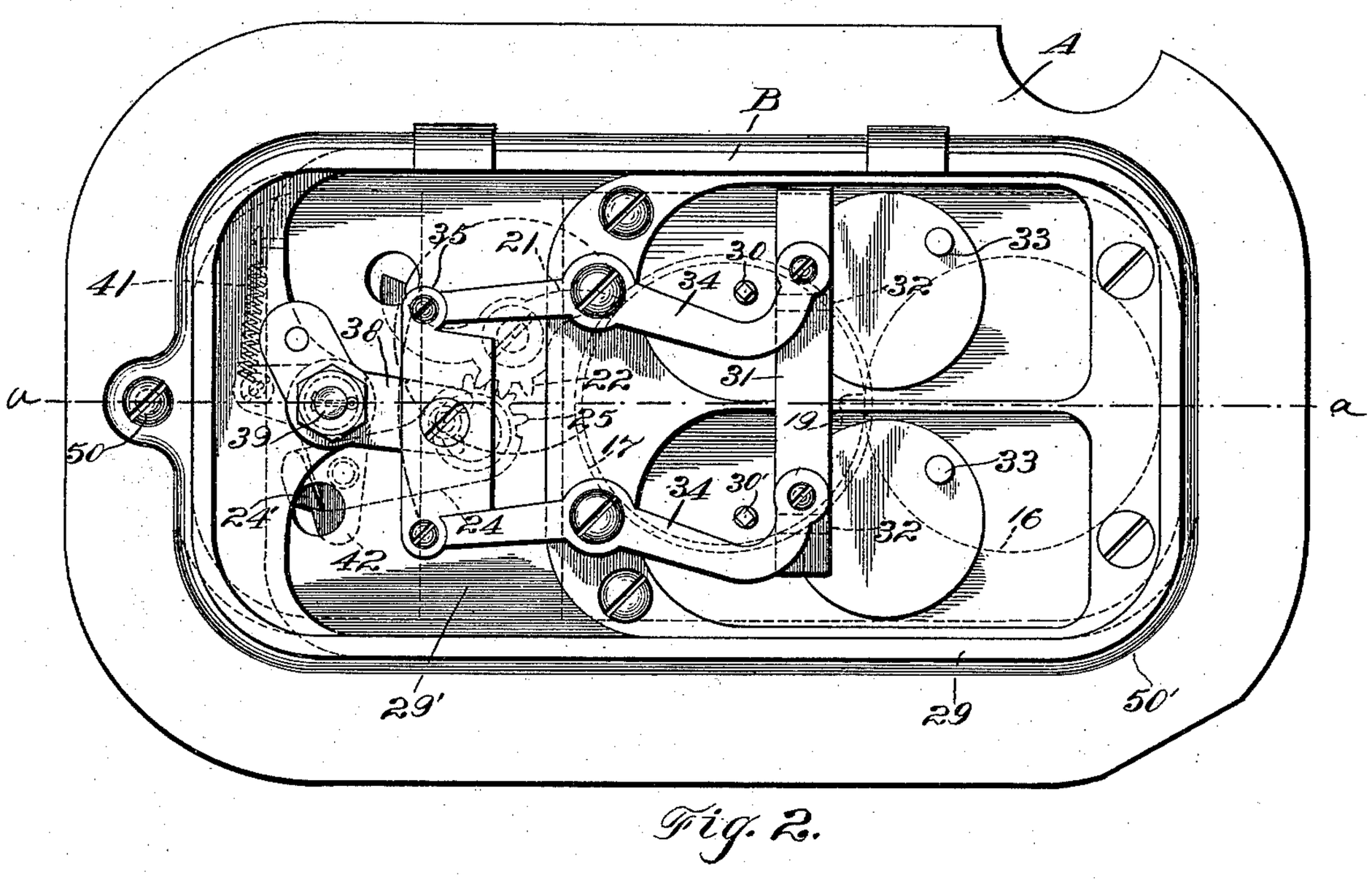

Fig. 2.

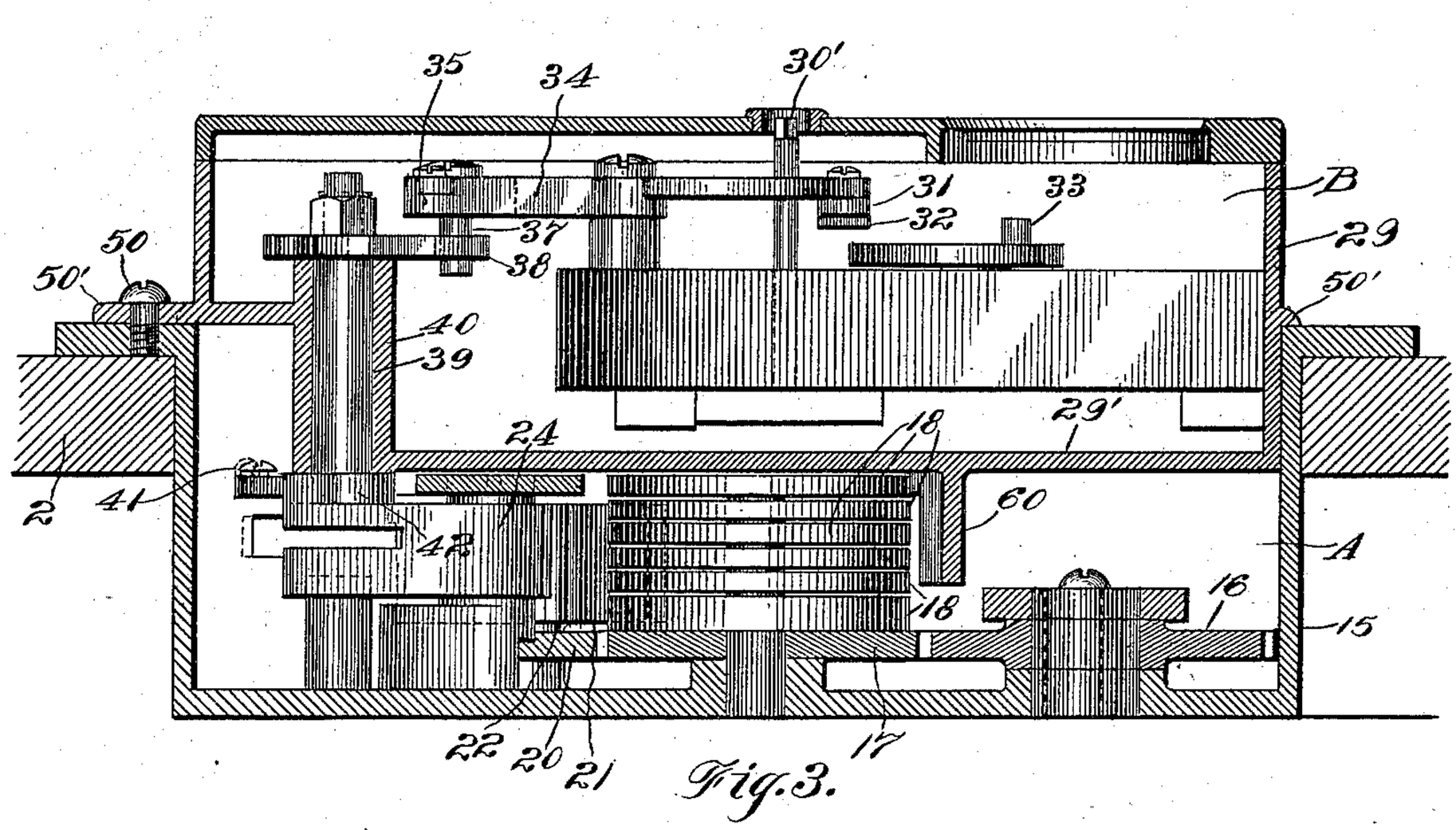

Fig. 3.

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DUPLEX LOCKING MECHANISM FOR SAFES OR VAULTS.

(Application filed July 27, 1901.)

(No Model.) 4 Sheets—Sheet 3.

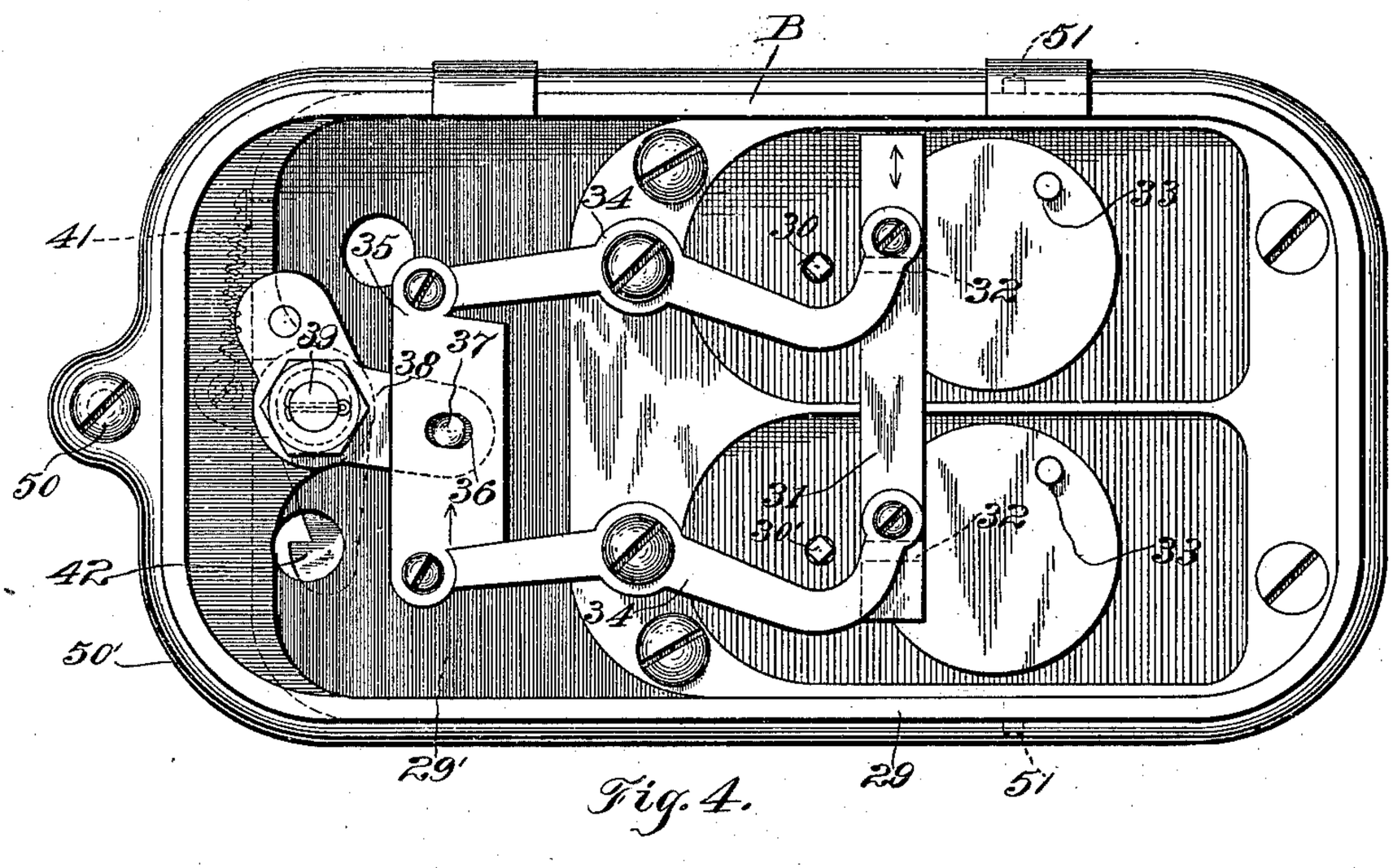

Fig. 4.

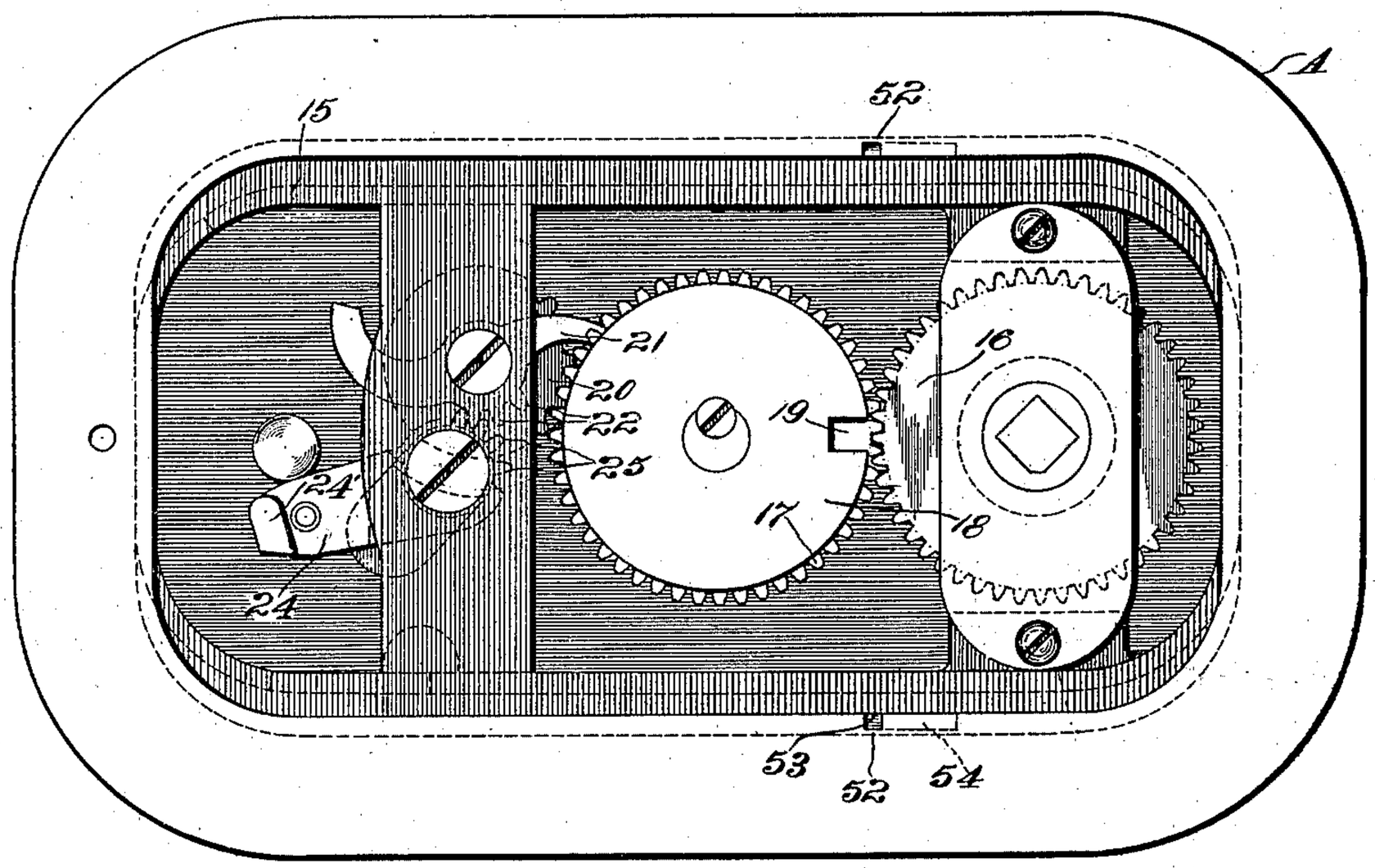

Fig. 5.

Witnesses.
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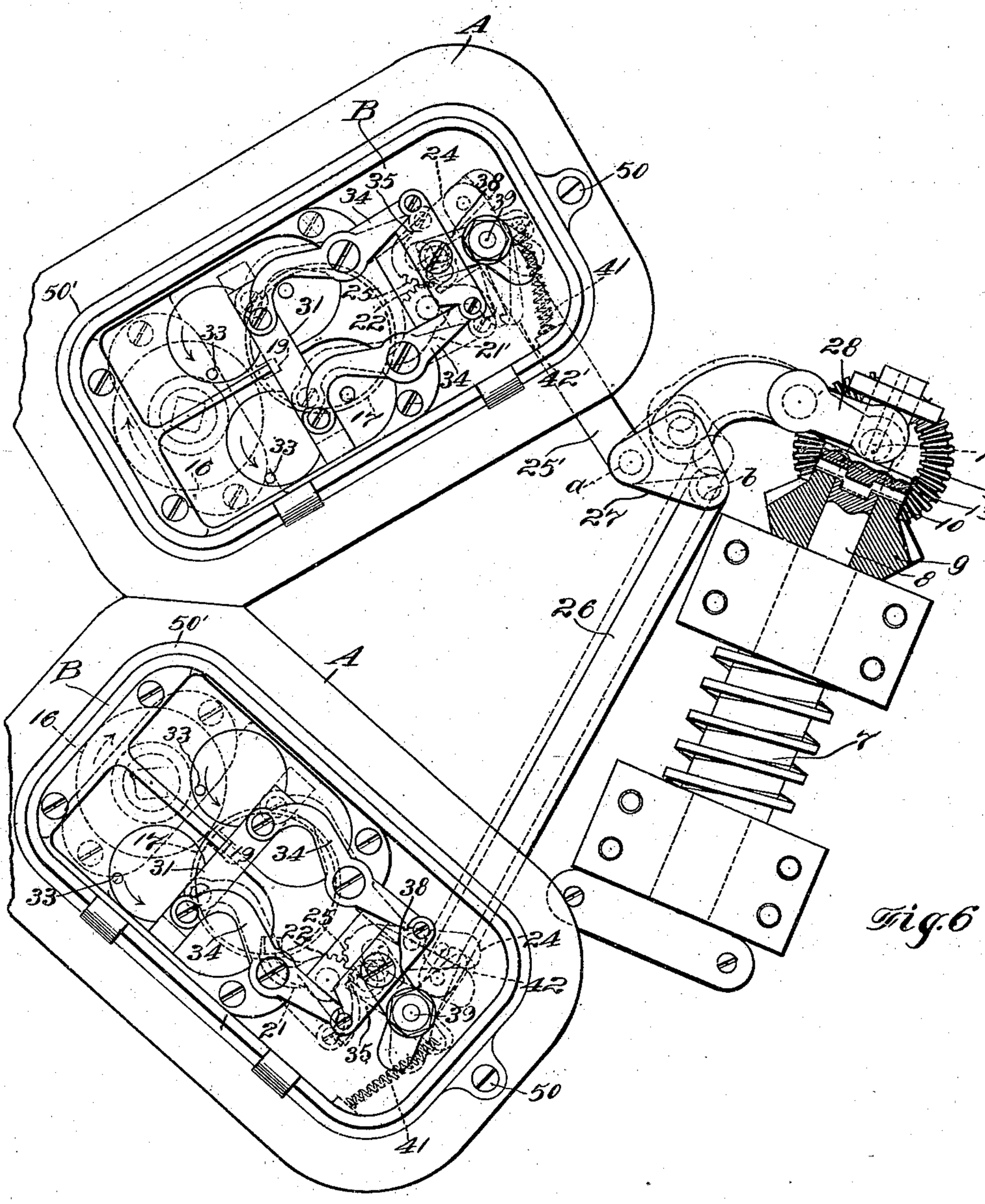

Fig. 6

Witnesses
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UNITED STATES PATENT OFFICE.

HENRY D. HIBBARD, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO THE HIBBARD-RODMAN ELY SAFE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DUPLEX LOCKING MECHANISM FOR SAFES OR VAULTS.

SPECIFICATION forming part of Letters Patent No. 691,942, dated January 28, 1902.

Application filed July 27, 1901. Serial No. 69,899. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. HIBBARD, a citizen of the United States, residing in Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Duplex Locking Mechanism for Safes or Vaults, of which the following is a specification.

This invention relates to lock mechanism particularly adapted for safes or vaults, the object of the invention being to provide an improved organization or system of lock mechanism comprising one or more dual locks, and is in part an improvement upon the mechanism shown and described in my contemporaneously-pending application, filed November 2, 1900, Serial No. 35,197, and now eventuated in Patent No. 679,378, dated July 30, 1901.

Another object of the invention is to provide detachable lock mechanisms dependent for their detachability upon the setting of a part of one of said mechanisms in a predetermined manner.

A further object of the invention is to provide lock mechanism in which the time and combination locks are disposed in juxtaposition and connected together in an improved manner, one to control the other.

A further object of the invention is to provide lock mechanism, including one or more time-locks, located in an improved manner in juxtaposition to and in front or rear of a combination-lock and connected therewith so as to control the same, and which time lock or locks can be readily detached intact from the combination-lock to permit the use of such combination-lock independently of the time-lock.

In the drawings accompanying and forming part of this specification, Figure 1 is a rear view of a safe or vault door with one form of bolt mechanism and its operating means combined with a pair of improved dual locks applied thereto. Fig. 2 is a top view of one of the dual-lock mechanisms. Fig. 3 is a longitudinal sectional view taken in line *a a*, Fig. 2. Fig. 4 is a top view of the time-lock mechanism detached from the combination-lock mechanism. Fig. 5 is a top view of the combination-lock mechanism detached from the time-lock mechanism. Fig. 6 is a view of this improved lock mechanism detached from the door and the means controlled thereby, and Fig. 7 is a view of a part of the time-lock casing.

Similar characters of reference designate corresponding parts in the various figures of the drawings.

The door in the form shown is substantially similar to that illustrated in my contemporaneously-pending application hereinbefore referred to, and therefore only a general description thereof is deemed necessary herein. This door comprises a body having a rearwardly-extending flange, to which is secured a back plate 2, which preferably carries various parts of the bolt-actuating mechanism, and which plate will also carry in the present instance the lock mechanism.

The door-flange is provided with bolt-openings 3, located at intervals, each of which is shown of tapered form, obtained by inclining one side of each opening. Working in these openings are bolts 4, pivotally secured at their inner ends to a rocking member or plate 5, having worm-teeth 6 on a part of its periphery. This rocking plate is mounted on a hub or projection preferably formed rigid with the back plate, and is in mesh with a worm 7 of a worm-shaft 8, mounted in suitable bearings carried by the plate between such plate and the door. This worm-shaft is provided with a beveled gear 9, in mesh with a similarly-formed gear 10, carried by a spindle 12, projecting through the door to the front thereof, and by means of which spindle on the rotation thereof the worm-shaft is rotated. To prevent the rotation of this worm-shaft except at the proper time, suitable controlling means is provided, shown in the form of clutch mechanism, and in the present instance the gear 9 is carried by or formed as a part of a loosely-mounted clutch member 9′, rotatable on such shaft and in position to be engaged by a clutch member 13, splined to such shaft, which clutch member 13 is controlled by the lock mechanism hereinafter described.

In the preferred form thereof herein shown and described the lock system in the present instance comprises a pair of combination-locks (designated in a general way by A) and two sets of time-locks, (each set designated in a general way by B,) each set comprising a pair of time-locks, one set for each combination-lock. It is, however, to be understood that this improved lock mechanism may in some instances comprise one time-lock for each combination-lock or in some instances one time-lock for a plurality of combination-locks, or the system may comprise one or more time-locks and one combination-lock. It is, however, preferable to provide a pair of combination-locks, since should one of them become inoperative for any reason the other can be utilized to operate the bolt system, thereby to unlock the door without the necessity of forcing the same, and it is also preferable to provide in connection with each of the combination-locks a pair of time-locks, whereby should one of the time-locks become inoperative the other will be effective to permit the combination-lock to be manipulated. Further, by providing a pair of combination-locks, one of such locks may be permitted to respond to its combination and yet not be effective to unlock the safe, thus demonstrating that the proper combination had been divulged, but that until the expiration of the time set for the time-lock to operate the safe or vault cannot be opened.

In the form shown each of the lock mechanisms is connected with the clutch member 13, whereby at the proper time such clutch member can be shifted by the manipulation of either combination-lock into engagement with the clutch member 9′, thereby to form connection between the worm-shaft and bevel-gear 9 of such clutch member 9′, so that upon the operation of the spindle the worm-shaft will be rotated to shift the bolts which move in a lateral and longitudinal or radial path and operate with a toggle action to draw the door to its seat with considerable force.

Since in the present instance the organization of each lock mechanism is the same a description of one is deemed sufficient.

The combination-lock may be of any desired form and usually comprises a suitable casing 15, carrying a spur-gear 16, mounted on the dial-spindle, which gear meshes with a similar gear 17, the spindle or arbor of which carries a series of disk-shaped tumblers 18, each having a notch 19. In mesh with this gear is a smaller gear 20, on the arbor of which is mounted a lever or fence 21, the hub thereof having teeth 22. This fence is so mounted that at certain periods the gear 20 will turn independently thereof, while at other periods friction will cause such fence to turn with the gear. Mounted in the lock-casing is the usual bolt or actuator 24, provided with gear-teeth 25, meshing with the teeth 22 of the fence. When the dial-spindle is operated, the tumblers will be rotated in the usual manner until the notches of all such tumblers register, whereupon the fence by means of the gear 20 will be shifted into position to have its end enter such notches, whereupon it will be rotated with such tumblers to shift the bolt or actuator 24.

The bolt of each combination-lock is shown recessed, each for the reception of the ends of levers 25′ 26, respectively, the opposite ends of which are connected with the splined clutch member 13 by suitable means, whereby the operation of either combination-lock will shift such splined clutch member into position to engage the loosely-mounted clutch member 9′ in the manner hereinbefore set forth. In the present instance the ends of these levers 25′ 26 are pivoted to a floating member or bell-crank 27, to which is connected a clutch-shifter 28, pivoted to the back plate, one end of which clutch-shifter is bifurcated in the usual manner for connection with the splined clutch member 13. On the operation of either bolt the bell-crank will be shifted, either the pivot *a* or *b* acting as the fulcrum thereof, and thereby move the clutch-shifter to throw the splined clutch member 13 into engagement with the loosely-mounted clutch member 9′.

In the present instance the combination-lock casing 15 is shown of somewhat greater depth than is necessary for the working parts of the lock.

To nullify temporarily the control of the combination-lock over the bolt mechanism, and thereby prevent the manipulation thereof should the combination be secured by duress from one familiar with it, improved time-lock mechanism is provided, which in the form shown comprises two sets of time-locks, one set for each combination-lock. A description of one time-lock mechanism is deemed sufficient. Each set comprises two independent time-locks 30 30′, located in a casing 29 and connected, however, by a suitable member 31, carrying a pair of stops 32, in position to be engaged by working faces 33 of such time-locks. Pivoted to this member 31 are a pair of levers 34, which are also pivoted to a bracket fixed to the lock-case, the opposite ends of which are pivotally secured to an actuator 35, having an elongated slot 36, into which projects a pin 37, carried by a lever 38, such elongated slot permitting the proper working of the parts. This lever 38 is fixed on a spindle 39, working in a suitable bearing 40 of the lock-case, said lever being maintained in its normal position and being returned thereto by a suitable spring 41, shown connected with one end of the catch 42, hereinafter described, and with a fixed point. Fixed on this spindle, at the lower end thereof, in juxtaposition to the combination-lock, is a device (shown herein as a hook or catch 42) in the nature of a stop member, coöperating with a projection 24′, formed on the bolt 24 of the combination-lock shown in Fig. 5. When the member 31 is

shifted in the direction of the arrow, Fig. 4, the actuator 35 is thrown in the direction of the arrow, and so rotates the spindle 39 and disengages the stop or catch 42 from the bolt 24, and thereby permits the manipulation of the combination-lock in the manner hereinbefore set forth. As hereinbefore stated, one time-lock might be used instead of two for each combination-lock.

In the present instance the bolt of one combination-lock is shown dogged by the catch of one set of time-locks, while the fence 21′ of the other combination-lock is dogged by the catch 42′ of the other set of time-locks. It will be obvious, however, that either both bolts or both fences may be dogged instead of a fence and a bolt. By dogging the fence of one and the bolt of the other combination-lock, however, that lock the bolt of which is dogged will respond to its combination without, however, permitting the boltwork to be shifted, and so indicate that the proper combination has been divulged, there being sufficient play between the gearing of the fence and the bolt to permit the fence to drop into its notches without, however, shifting the lock-bolt. This would demonstrate to a burglar that even with the proper combination the opening of the safe is not possible until the time set for the time-locks to operate has expired. When the fence instead of the bolt is dogged, the combination-lock will not respond to manipulation, since it is locked against any movement whatever and cannot therefore be moved to drop into the tumbler-notches.

In the form shown each set of time-locks controlling its combination-lock is located in juxtaposition to such combination-lock and in such position relatively thereto that its working parts are in a plane substantially parallel to the plane of the working parts of the combination-lock—that is to say, the combination-lock is in the rear or front of said time-locks, whereby considerably less door area is required to mount the lock mechanism, such time-locks being readily detachable from the combination-lock, whereby the latter can be used without the former whenever it is desired so to do and the time-locks readily located in position when it is desired to control the working thereof by this means.

When the combination-lock is used alone, its casing 15 will be closed by a suitable plate; but when used in connection with the time-locks the bottom 29′ of the casing 29 of such time-lock will constitute the top of the combination-lock casing 15, the two casings being secured together in an improved manner. In the present instance part of the time-lock casing 29 projects into the combination-lock casing 15, such casings being secured together by a screw 50 at one end, Fig. 3, and by a pin-and-slot connection at other parts thereof, the organization being such that one cannot be detached from the other without shifting the time-lock casing relative to the combination-lock casing in a particular manner. The time-lock casing is provided with a flange 50′, adapted to rest on the edge of the casing 15, and it is also provided with a pair of pins or projections 51, coöperating with a pair of recesses 52, one formed at each side of the casing 15, each such recess comprising a part 53, communicating with the upper edge of the casing, and a slot 54, extending lengthwise thereof, whereby the casings may be locked together in a manner which will be readily understood by inserting the casing 29 into casing 15 and then shifting the casing 29 lengthwise to carry its pins into the slots 54. This pin-and-slot connection it will be seen forms substantially a bayonet-joint connection. To prevent the shifting of one casing relatively to the other to detach the same, a projection 60 is formed on the under side of the time-lock casing 29, Fig. 3, in position to register with the notches in the tumblers, whereupon when in register therewith the time-lock casing can be shifted to the left to permit the projection 60 to enter the recesses in the tumblers, and thereby permit the separation of the casings. From this it will be seen that unless the tumblers have all of their notches in register and in register with the projection 60 the separation of the two casings cannot take place.

By locating the time and combination locks in juxtaposition, but readily separable from each other, the combination-lock may be used independently of the time-lock when preferred, but the latter quickly and easily attached when desired without any reorganization or reassemblage of mechanisms. Furthermore, this organization materially simplifies the parts and does away with the dogging-levers necessary when the combination and time locks are located relatively remote to each other. By locking the casings together it is not possible for any one when the safe is open to surreptitiously detach the time-lock, and so discover the organization of or reset the combination-lock.

By locating one lock mechanism in juxtaposition to the other and when a pair of casings are used one within the other the locks can be more closely assembled, so that the distance such locks will project from the door into the interior of the safe is materially diminished.

By means of the present organization the lock mechanism will take up very much less area both in the plane of the door as well as interiorly of the safe.

The term "detachable" or "detachably connected" or equivalent expression as used herein and in the claims means that one lock mechanism or one lock mechanism and its casing can be separated or detached from the other without the necessity of dismantling or tampering with any part of the mechanism of either lock. In other words, by simply removing the top casing containing the time-lock from the lower casing containing

the combination-lock the mechanisms will be readily separated without the necessity of first removing pivots, screws, or bolts, so that one mechanism can be readily detached from the other without interfering with pivotal connections of any part of the mechanisms of either lock. Consequently two mechanisms which are separable only after various screws, pivots, or parts of one or both have been removed or disconnected are not readily detachable one from the other within the meaning of the terms "detachable" or detachably connected" as used in those claims where this is an essential feature.

Having described my invention, I claim—

1. A lock mechanism comprising a time-lock and a combination-lock each inclosed within a separate casing, one in front of the other and operatively connected, one casing supporting the other and one secured to the other and readily detachable therefrom together with its lock mechanism without disarranging any part of the mechanism of either lock.

2. A lock mechanism comprising a time-lock and a combination-lock each inclosed within a separate casing, one in front of the other and operatively connected, said casings having means for locking them together to permit the ready detachment of one from the other without dismantling any part of the mechanism of either lock from the part of such lock with which it coöperates.

3. A lock mechanism comprising a pair of locks, each inclosed within a separate casing, one of said casings having detachable connection with the other casing; and means coöperating with a part of the lock mechanism of one of said locks to prevent the separation of said casings except when one of said mechanisms is properly manipulated to bring a part thereof into a predetermined position.

4. A lock mechanism comprising a pair of complete lock mechanisms each inclosed within a separate casing, one in front of the other, one casing having detachable connection with the other casing and the bottom of one casing constituting the top of the other casing.

5. A lock mechanism comprising a time-lock and a combination-lock, each inclosed within a separate casing, a part of the casing of one of said locks projecting into the casing of the other lock.

6. A lock mechanism comprising a combination-lock and a time-lock, each inclosed within a separate casing, a part of the casing of the time-lock projecting into the casing of the combination-lock.

7. A lock mechanism comprising a pair of locks, each inclosed within a separate casing, a part of the casing of one of said locks projecting into the casing of the other lock, said casings being removably locked together.

8. A lock mechanism comprising a combination-lock and a time-lock, each inclosed within a casing, one projecting into the other, and having a pin-and-slot connection.

9. A lock mechanism comprising a combination-lock and a time-lock, each inclosed within a casing, one casing projecting into the other and shiftable within the same and having its bottom constituting the top of the other casing, and one of said casings having detachable connection with the other casing.

10. A lock mechanism comprising a combination-lock inclosed within a casing and a time-lock inclosed within a casing, the bottom of one casing constituting the top of the other casing, and one of said casings having a flange resting on the other casing, and also having means coöperating with means carried by the other casing for detachably locking said casings.

11. A lock mechanism comprising a combination-lock having tumblers provided with notches; a casing therefor; time-lock mechanism; a casing therefor; and means for locking said casings together, one of said casings having means in position to register with the notches in said tumblers whereby when said notches are in register with said means the casings can be separated.

12. A lock mechanism comprising a combination-lock having tumblers provided with notches; a casing therefor; time-lock mechanism; a casing therefor; and means comprising a pin-and-slot connection for locking said casings together, one of said casings having a part thereof in position to register with the notches in said tumblers whereby when said notches are in register with said part the casings can be separated.

13. A lock mechanism comprising a pair of mechanisms, one of said mechanisms having one or more tumblers each having a notch, means connected with the other of said mechanisms and adapted to register with said notch or notches whereby when in register therewith one of said mechanisms can be shifted thereby to detach it from the other; and means for preventing the detachment of said mechanisms except by the shifting movement of one relative to the other.

14. A lock mechanism comprising a pair of mechanisms, one having one or more devices each provided with a notch, and one of said mechanisms having means connected therewith and adapted to register with said notch or notches, whereby when in register therewith one mechanism can be detached from the other, and means for maintaining said mechanisms in a coöperative position.

15. A lock mechanism comprising a pair of lock mechanisms mounted in juxtaposition with their mechanisms operatively connected and readily detachable, without tampering with the mechanism of either lock, when one mechanism is manipulated to bring a part thereof into a predetermined position.

16. A lock mechanism comprising a pair of lock mechanisms, one comprising a time-lock and the other a combination-lock, mounted in juxtaposition with their mechanisms operatively connected and readily detachable,

without dismantling any part of the mechanism of either lock from the part of such lock with which it coöperates, when one mechanism is manipulated to bring a part thereof into a predetermined position.

17. The combination of a pair of detachably-connected lock mechanisms; and means for preventing the separation of said lock mechanisms until the proper setting of a part of one of said mechanisms.

18. A lock mechanism comprising a pair of locks mounted in juxtaposition and detachably connected, the working parts of one lock being in front of the working parts of the other.

19. A lock mechanism comprising a combination-lock and a time-lock mounted in juxtaposition and connected, the working parts of one lock being in front of the working parts of the other.

20. A lock mechanism comprising a combination-lock and a time-lock, each inclosed within a casing mounted one in front of the other, and operatively connected, said mechanisms being detachably connected through the medium of said casings.

21. A lock mechanism comprising a combination-lock having a bolt, and one or more time-locks detachably connected thereto and having a part controlling said bolt, said locks being detachable only after the proper setting of part of one of said locks.

22. A lock mechanism comprising a combination-lock having a bolt and a fence, and one or more time-locks located in juxtaposition to and detachably connected with said combination-lock and having a part controlling said bolt by engaging and dogging the fence of said combination-lock.

23. A lock mechanism comprising a combination-lock having a bolt, and one or more time-locks mounted in juxtaposition to said combination-lock, the working parts of one lock being located in front of the working parts of the other, and said time lock or locks having means for controlling the bolt of said combination-lock.

24. A lock mechanism comprising a combination-lock having a shiftable member, and one or more time-locks mounted in juxtaposition to said combination-lock, the working parts of one being located in front of the working parts of the other, said time lock or locks having means for dogging said shiftable member.

25. A lock mechanism comprising a combination-lock having a shiftable member, a time-lock located in juxtaposition thereto, one in front of the other, and detachable therefrom, said time-lock having a member for controlling the effectiveness of said shiftable member.

26. The combination with boltwork, of a pair of combination-locks for controlling the working of the bolts, each having a bolt and a fence; time-lock mechanism located in juxtaposition to and detachably connected with each combination-lock, one time-lock mechanism dogging the bolt of one combination-lock and the other dogging the fence of the other combination-lock.

27. The combination with boltwork, of a pair of combination-locks for controlling the working of the bolts; time-lock mechanism located in juxtaposition to and detachably connected with each combination-lock, one time-lock mechanism dogging a part of one combination-lock and the other a part of the other combination-lock.

28. The combination with a pair of detachably-connected locks, one a combination-lock, of means for preventing the separation of said locks until the combination-lock is set in a predetermined manner.

29. A lock mechanism comprising a time-lock and a combination-lock, said time-lock embodying a spindle carrying a locking member, and said combination-lock embodying a shiftable member working in a plane parallel to the plane of said locking member.

30. The combination with boltwork for safes or vaults, of lock mechanism for controlling the operation thereof, and comprising a combination-lock and one or more time-locks located in juxtaposition to and detachable from said combination-lock after a part thereof is properly set, said combination-lock having a part controlled by said time lock or locks and connected with means for controlling the boltwork.

31. The combination with boltwork for safes or vaults, of lock mechanism for controlling the operation thereof, and comprising a combination-lock and one or more time-locks located in juxtaposition to and detachably connected with said combination-lock, said combination-lock having a part controlled by the time lock or locks and connected with clutch mechanism for controlling the boltwork.

32. The combination with boltwork for safes or vaults, of worm-gearing for controlling the movement thereof; clutch mechanism in connection with said gearing; a pair of lock mechanisms, each comprising a combination-lock having a shiftable member, and a pair of time-locks having means for controlling the operation of said member, each of said combination-locks being connected with said clutch mechanism.

33. The combination with boltwork for safes or vaults, of worm-gearing for actuating said boltwork; means for controlling the operation of said gearing; a pair of combination-locks in operative connection with said controlling means; and one or more time-locks detachably connected to each combination-lock for controlling the same.

34. The combination with boltwork, of worm-gearing for actuating said boltwork; means for controlling the operation of said gearing; a combination-lock in operative connection with said controlling means; and one

or more time-locks detachably connected with said combination-lock for controlling the same.

35. The combination with boltwork for safes or vaults, of lock mechanism for controlling the operation thereof, and comprising a combination-lock, and one or more time-locks located in juxtaposition to and in front or rear thereof, and detachably connected with said combination-lock, and having means controlling the effectiveness of said combination-lock.

36. A lock mechanism comprising a pair of locks operatively connected, each of a different formation and inclosed within a separate casing, and one readily detachable from the other, without interfering with the pivotal connections of either of such mechanisms, after one of said mechanisms has been manipulated to bring a part thereof into a predetermined position.

37. A lock mechanism comprising a pair of detachably-connected locks, one having a bolt and a fence and the other having a part controlling the working of said bolt by dogging the fence thereof, said locks being detachable only after the proper setting of a part of one of said locks.

38. The combination with a pair of locks, of a lock mechanism detachably connected with and located in front or rear of each of such locks and controlling a part thereof.

39. The combination with a pair of locks, of a lock mechanism detachably connected with such locks and controlling differently-formed parts thereof, such detachability depending upon the proper manipulation of a part of said lock mechanism.

40. A lock mechanism comprising a pair of locks, one having a working part provided with a notch or recess and the other having connected therewith means in position to register with said notch, whereby when in register therewith said locks can be detached one from the other; and means for preventing the separation of said locks when said parts are out of register.

41. A lock mechanism comprising a pair of locks detachably connected and having cooperating means effective when in register to permit the separation of said locks; and means for preventing the separation of said locks except when said means register.

42. A pair of casings for the reception of lock mechanisms detachably connected by a bayonet-joint connection.

43. A pair of casings for the reception of lock mechanisms, one having a part projecting into the other and forming the top thereof and detachably connected thereto.

44. A pair of casings for the reception of lock mechanisms, one having a part projecting into the other and forming the top thereof and detachably connected thereto by a pin-and-slot connection.

45. A lock mechanism comprising a pair of locks a casing for each of said locks; means for detachably securing said casings together; and means for preventing the separation of such casings and including a part carried by one of said casings and coöperating with a part of the lock mechanism carried by the other of said casings.

46. The combination with a pair of combination-locks, one having a bolt and the other a fence, and time-lock mechanisms located in juxtaposition to and detachably connected with each combination-lock, one time-lock mechanism dogging the bolt of one combination-lock and the other dogging the fence of the other combination-lock.

47. The combination with a pair of combination-locks, of time-lock mechanism located in juxtaposition to and detachably connected with said combination-locks and controlling differently-formed parts of said combination-locks.

48. A lock mechanism comprising a pair of casings, one carrying a combination-lock and the other a time-lock, said time-lock including a spindle projecting into the casing of the combination-lock and carrying a locking member effective to engage a part of the combination-lock.

49. A lock mechanism comprising a pair of casings, one carrying a combination-lock and the other a time-lock, said time-lock including a spindle projecting into the casing of said combination-lock and carrying a locking member comprising a hook effective to engage a part of the combination-lock.

50. A lock mechanism comprising a time-lock and a combination-lock, one mounted upon the other, said time-lock including a spindle carrying a locking member comprising a hook, and said combination-lock including a bolt having a projection adapted to be engaged by said hook.

51. A lock mechanism, comprising a pair of detachably-connected locks, one having a bolt and a fence and the other having a part effective to engage and prevent the movement of one of said devices.

52. A lock mechanism, comprising a pair of detachably-connected locks, one a combination-lock having a bolt and a fence, and the other having a part effective to prevent the movement of one of said devices, and means for preventing the separation of said locks until the combination-lock is set in a predetermined manner.

53. The combination with a casing containing a combination-lock mechanism, of a separate casing containing time-lock mechanism, said casings interlocking, and one provided with means which, unless the combination is set in a predetermined position, prevents the separation of said casings.

54. The combination with a casing containing a combination-lock mechanism, of a separate casing containing time-lock mechanism, said casings interlocking, and one provided

with means which, unless the combination is set in a predetermined position, prevents the separation of said casings, and means adapted to prevent the working of a part of said combination-lock mechanism.

55. The combination with a casing containing a combination-lock mechanism, of a casing containing time-lock mechanism, the two casings having interlocking means, and the time-lock casing having means coöperating with means located in the other casing to prevent the separation of the said casings.

HENRY D. HIBBARD.

Witnesses:
C. A. WEED,
GEO. N. SEARS.