No. 879,371. PATENTED FEB. 18, 1908.

A. DE VILBISS, JR.

VERTICAL LOCK.

APPLICATION FILED SEPT. 13, 1904.

3 SHEETS—SHEET 1.

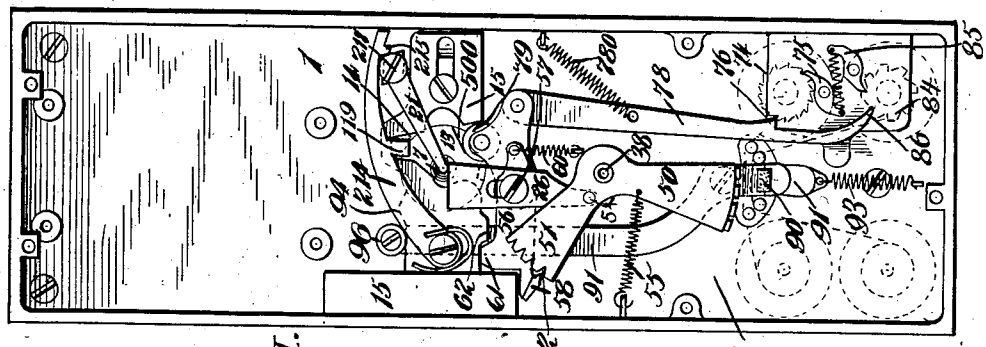

Fig. II.

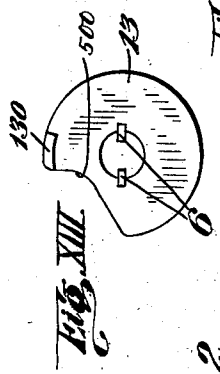

Fig. XIII.

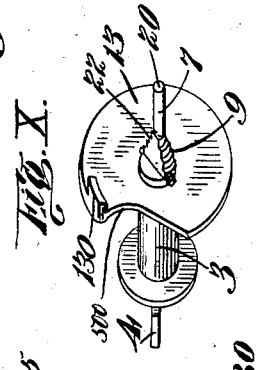

Fig. X.

Fig. XII.

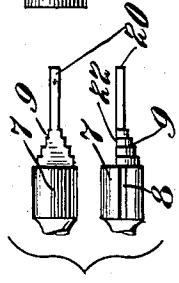

Fig. XI.

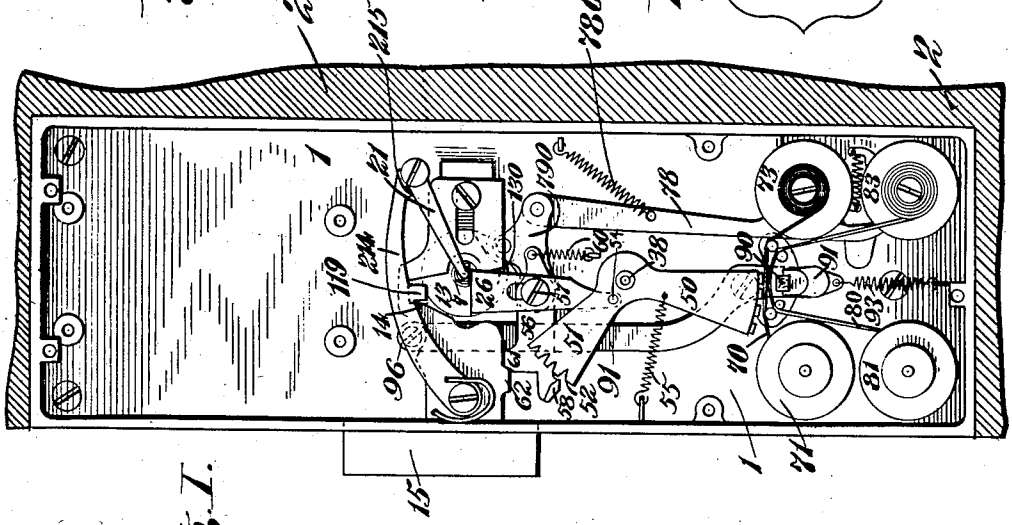

Fig. I.

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3 SHEETS—SHEET 2.

Fig. V.

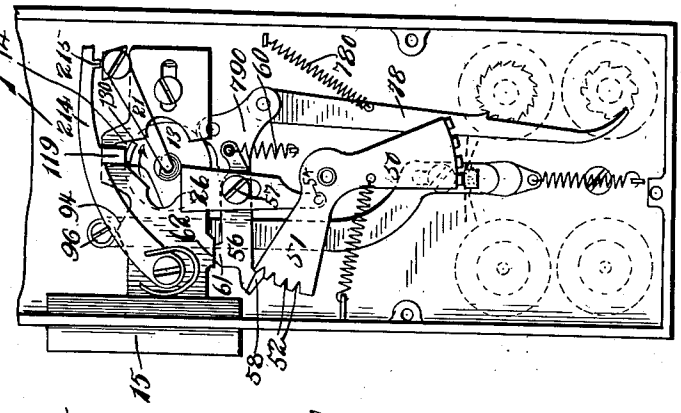


Fig. IV.

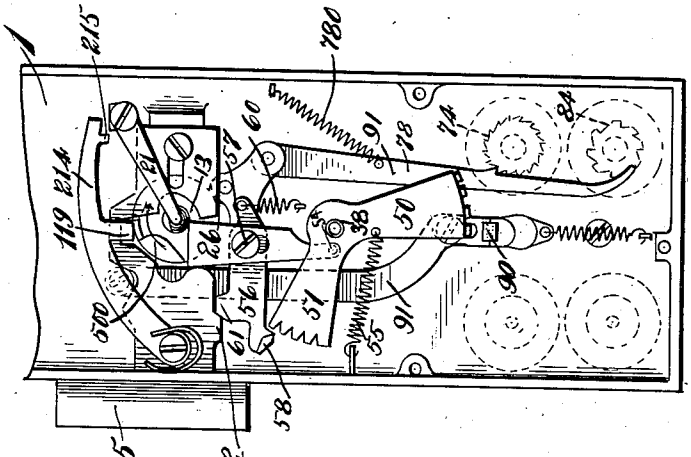
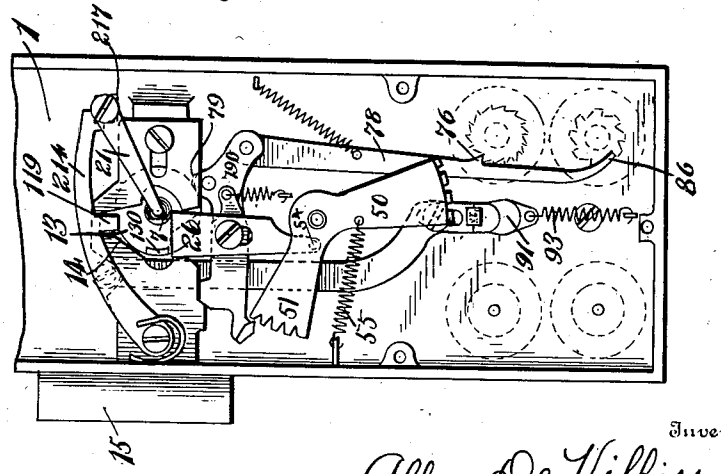


Fig. III.



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VERTICAL LOCK.

APPLICATION FILED SEPT. 13, 1904.

3 SHEETS—SHEET 3.

Fig. IX.

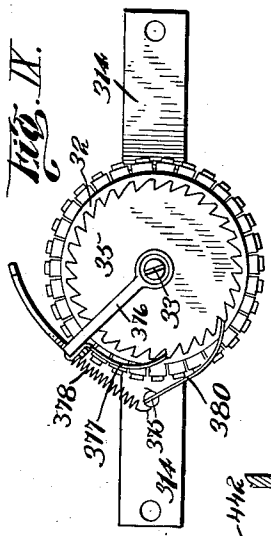


Fig. VII.

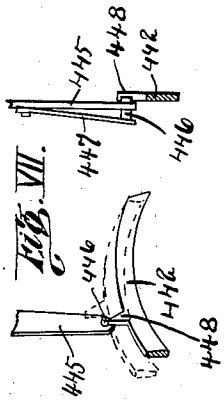


Fig. VIII.

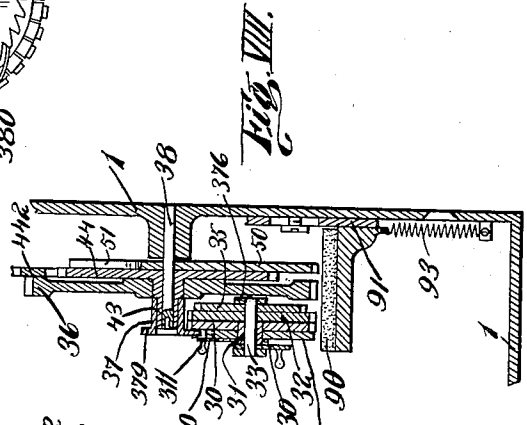
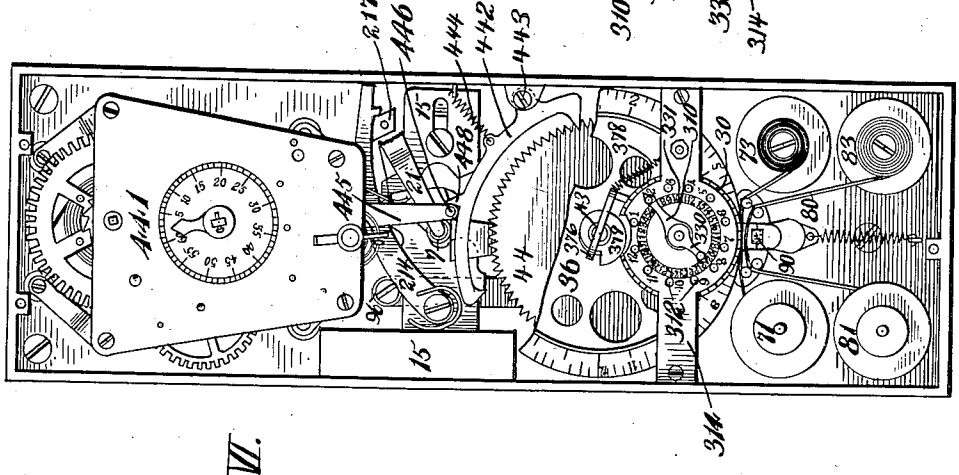


Fig. VI.



Witnesses:

Eugene M. Sliney.

S. A. Battan.

Inventor:

Allen De Vilbiss, Jr.,

By Collamer & Co., Attorneys.

UNITED STATES PATENT OFFICE.

ALLEN DE VILBISS, JR., OF TOLEDO, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-SIXTHS TO JOHN F. PIXLEY, ONE-THIRD TO ALICE S. WELLS, AND ONE-SIXTH TO MARTHA S. PARK, OF COLUMBUS, OHIO.

VERTICAL LOCK.

No. 879,371. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed September 13, 1904. Serial No. 224,281.

To all whom it may concern:

Be it known that I, ALLEN DE VILBISS, JR., a citizen of the United States, and a resident of Toledo, Lucas county, State of Ohio, have invented certain new and useful Improvements in Vertical Locks; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with a claim particularly specifying the novelty.

This invention relates to recorders, more especially of that class known as recording locks such as are actuated by any one of several individuals.

The primary object of the present invention is to produce a recording-lock which, each time its bolt is moved in either direction, will furnish a correct designation of the individual who operated it, or rather, of the means employed in the operation of the lock. I may also employ mechanism to be set by hand or otherwise so that a simultaneous date-record can be furnished on each occasion of the movement of the bolt in either direction. In some cases an hour wheel may be added to furnish a more exact time-record; and in certain forms of the lock a clock mechanism may be employed to automatically set the time-indicator—the hour wheel only, or that wheel and others which constitute parts thereof.

The present invention is an improvement over that described in my U. S. Patent No. 735,034, dated July 28, 1903; and it is an improvement over and contains modified forms of some of the details of my two pending applications bearing Serial Numbers 171,256 and 175,015. In its preferred form, the casing of the present lock is quite narrow and rather tall so as to adapt it to certain uses as occasion may demand, and I call it the "vertical lock" to distinguish it from the others. However, the principal point of difference is that in the present invention the setting of a differentiating member and its rotation in one direction to shoot the bolt actuates the various mechanisms precisely as would its setting and rotation in the opposite direction to retract the bolt, excepting only that if said member is differently set for these two steps a different indication will result, and if the hour wheel is employed as in the modified form of the present device a different hour or hour and fraction will be indicated by the two steps. Various means and mechanisms may be employed for setting said member, rotating it, or both; and the scope of my invention contemplates the use of one or more keys, one or more knobs, one or more of each, the permutation-lock system, or any other device or devices which will produce the end desired. For purposes of illustration I have in this specification set forth one manner of carrying out the idea, namely by the use of keys of different lengths for different workmen; but I desire to be understood as intending to cover the principle involved, no matter what means are employed for setting the differentiating member and turning it in either direction.

In the accompanying drawings:—Figure I is an elevation of the simpler form of this lock with the inner face plate removed and the bolt shot. Fig. II is a similar elevation excepting that the bolt is retracted, the winding spools for the ink ribbons and paper strip being indicated in dotted lines. Fig. III is a similar elevation with the parts in the first position between Figs. I and II. The slide has here been turned sufficiently to set the key-indicator, and the tumbler has moved the feed lever. Fig. IV is a similar view showing the second position in which the lug on the tumbler has raised the bolt-stop. Fig. V is a view of the third position in which said lug is retracting the bolt, the lower cam on the latter is actuating the alining mechanism, and its upper cam is moving the platen. Further rotation of the tumbler brings the parts back to the position shown in Fig. II. Fig. VI is a view similar to Fig. II, excepting that an hour wheel, date and month wheels, a clock mechanism, and an escapement are added, the hour wheel being partly broken away to show the escapement-wheel which works in conjunction with it. Fig. VII is a perspective detail showing the operation of the clock lever on the point of the escapement. Fig. VIII is a central vertical section through the escapement, the various time-wheels, and the platen. Fig. IX is an inner view of the date and month wheels and the bracket for supporting them. Fig. X is a perspective view of the main tumbler and the slide therethrough. Fig. XI shows side views of said slide in two positions. Fig. XII is an edge view of the main tumbler; and Fig. XIII is an enlarged elevation thereof.

The lock proper comprises a casing 1 secured to the inner side of a door or frame 2, which latter is bored to receive a tumbler-tube of the usual pattern. In the present instance, a key passes through this tube and operates the tumblers therein in the well known manner. In one form of embodiment of my invention I propose to employ keys of different lengths as the means to be recorded and each of which is adapted to control the operation of certain parts of the apparatus according to the length of such keys, as will appear more fully hereinafter; therefore the length of the inner projecting end of the key is important. This key turns the main tumbler 13 through whose axis extends an aperture in which moves a "differentiating member." By preference the latter is a slide 7 having a cylindrical body with longitudinal slots 8 engaging tongues 6 which project into a circular hole in the tumbler whereby these parts rotate together in either direction but the slide is movable longitudinally within the tumbler. The inner end of the differentiating member has a varying dimension; as here shown it is tapering or conical at 9 (preferably in steps), one side of the cone being cut away as at 22; and the entire slide is pressed normally outward into the tumbler tube by means of a spring 21 which is suitably attached to the casing 1 and bears against the reduced tip 20 of the slide. Said tumbler 13 carries a rearwardly projecting lug or cam 130 which moves within an opening 14 in the bolt 15, whereby the latter is shot or retracted by the movements of the lug. There may also be used a movable stop-lever 214 here shown as pivoted to the bolt and having a pin or nose 215 which normally engages a fixed stop 217 carried by the casing, and a projection 119 on this lever stands within the opening 14 in the bolt so that as the tumbler 13 rotates its lug 130 engages said projection and raises the lever to release the bolt before the lug moves the latter in either direction.

In the present case the keys are differentiated from each other by slight differences in the length of their inner ends. The designating mechanism shown in Figs. I and VI of the present case includes a time-indicator, a key-indicator, an inker for both, a paper roll from which a strip is drawn over the indicators by a paper-feed, and a platen for producing a record on said strip from said indicators; but it will be clear that the inker could be omitted and the characters punched through or indented into the strip, or indicated on a strip or other object in any suitable manner without departing from the spirit of my invention. The recording mechanism in Fig. VI shows the month and date wheels and an hour wheel driven independently by a clock mechanism, whereby in addition to the month and date the hour (or in some cases more exact points of time) is recorded when the bolt is moved in either direction. The present specification and drawings merely show one manner of carrying out the broad idea, and the various parts enumerated will now be described separately in as much detail as is necessary to their comprehension.

70 is an inking ribbon leading from spool 71 to that numbered 73, and between them passing over suitable guides; 80 is a paper strip leading from a spool 81 over suitable guides to a spool 83; 78 is the lever for turning these spools intermittently by means of its hooks 76 and 86 engaging ratchets 74 and 84 on the spools, the latter being held by retaining pawls 75 and 85; and 90 is the platen mounted on a slide 91 which is borne normally away from the paper by a spring 93. These various parts have substantially the same functions as equivalent elements in my patent above referred to, though with a lock of the present construction their operating means are necessarily slightly different. I will describe the means shown in the attached drawings for operating these parts, although I do not wish to be confined to these specific devices in the construction of claims which cover these elements broadly.

The lever 78 is normally raised by a spring 780. At its upper end it carries a projection or wheel 79; or, as in the present case, an additional and supporting lever 790 may carry this wheel which will stand within a cam-notch 500 in the tumbler 13 when the bolt is at rest. To move the bolt in either direction, a complete revolution of this tumbler is necessary, and in such revolution said wheel is depressed and with it the lever 78—this action of the lever thereby causing the feed of the ribbon and paper strip.

The slide 91 which supports the platen may be operated in many specifically different ways. In the present arrangement to which, however, my invention is not to be limited or restricted, this slide carries at its upper end a projection or wheel 96 which is engaged by a projection or cam 94 on the bolt as the latter is moved in either direction—hence the movement of the bolt raises the platen against the tension of the spring 93 and presses the paper against the ribbon and the ribbon against the type—no matter in which direction the bolt moves.

The key-indicator may be variously constructed and operated within the spirit and scope of my invention. In the present form which I have selected for purposes of illustration, the key recording mechanism comprises a segment 50 pivotally mounted on a shaft 38 within the casing and having at its periphery which stands over the ink-ribbon a series of characters corresponding with the various keys to be used. The segment extends above the shaft 38 where it has a sector 51 provided with notches 52 in its upper

edge; and at one side of the shaft there is pivoted to the sector at 54 a push-bar 26 which is here drawn normally upward by means of a spring 55.

56 designates an alining lever pivoted at 57 and having a point 58 adapted to enter one of said notches 52 but held normally out of it by a spring 60; and this lever has a projection 61 which is engaged by a cam 62 on the bolt as the latter moves in either direction.

The upper end of the bar 26 is controlled by being engaged by one of the steps 9 as the key presses inward and rotates the slide 7, and the radius of that step regulates the degree to which the bar 26 shall be depressed and hence the swing of the segment 50 and the character thereon which is brought above the platen. Further turning of the slide moves the bolt which next operates the alining lever so as to hold the segment steady, and then operates the platen to produce the printing as above described—the feed of the ribbon and paper having been accomplished at some other time before the printing is actually taking place.

The time-indicator employed in connection with the key-indicator, in the simplest type of the present invention, consists of month and date wheels (more fully illustrated in Fig. VI) preferably of the following construction: 30 is a month wheel having twelve characters on its edge and a tubular shaft 31, the latter having a handle 310 moving over a dial or provided with a stud 311 at its outer end adapted to spring into one of a series of twelve numbered sockets 312 in a bracket 314 supported by the casing, which bracket forms the bearing for the month and date mechanisms. 32 is a date wheel having thirty-one characters on its edge, and its shaft 33 (which is journaled within the tubular shaft) may also carry a handle 330 moving over a dial 331 carried by the bracket 314, by means of which handle the date wheel can be set manually.

The time-indicator, in an amplified form of the present invention, may also include means for indicating finer divisions of time than the month and date, as follows: The hour wheel (so called because it has twenty-four type-indications on its edge, though it might have a greater number indicating quarter hours or even finer divisions of time) comprises a main wheel 36 through whose hub extends the tubular spindle 43 of an escapement wheel 44 having peripheral teeth corresponding in number with that of the hour indications on the main wheel, said spindle being journaled on the shaft 38.

442 is an escapement pivoted at 443 within the casing and having its points alternately engaging the teeth of the wheel 44. This escapement is held raised by means of a spring 444, and is depressed periodically (in the present instance every hour) by the following mechanism, although any suitable trip properly actuated by a clock mechanism could be employed. Said clock mechanism is designated by the numeral 441, and from it depends a lever 445 carrying a beveled latch 446 borne normally inward by a spring 447. 448 is a point on the escapement which stands in the path of this latch. As the latter moves in one direction, its spring permits the latch to yield so that it passes behind the point, while in its movement in the opposite direction it travels up the inclined side of the point and depresses the latter to actuate the escapement in a manner which will be clear. It will hardly be necessary to illustrate or describe the means by which the clock mechanism 441 swings this lever, but it will be clear that its movement will periodically turn the main wheel 36 one step so as to bring a new type face over the platen. The frictional mounting of the hub of said main wheel on the spindle 43 of the escapement wheel permits the hour wheel to be turned by hand to set its type-faces with respect to the teeth of the escapement.

The time-indicator as a whole, comprising the date wheels and the hour-wheel, may be set automatically to a certain extent, as by the following mechanism: 35 is a ratchet wheel having thirty-one teeth in its edge, and the hub of this wheel is mounted frictionally on the shaft 33 of the date wheel at one side of the latter. 375 is a stud on the bracket 314 from which extends a retaining pawl 380 engaging the teeth of the ratchet. 376 is a hook journaled loosely on the shaft 33 and carrying an operating pawl 377, this hook being drawn toward the stud by a spring 378. The outer end of this hook is engaged by a spiral cam 379 which is carried by a sleeve 37 mounted frictionally on the spindle 43 of the escapement wheel 44. Thus at every revolution of the latter the cam draws the hook against the tension of its spring and then releases it, and such release permits the spring to retract the hook and turn the ratchet the distance of one tooth. Such turning carries the date wheel one step forward and automatically changes the date. It is clear that by slight multiplication of mechanism the date wheel could be made to set the month wheel automatically, but as the months differ in the number of days I prefer to retain simplicity and employ the manual setting above described. The bracket 314 is so located and the diameters of the date and month wheels are such that their type faces stand flush with those of the hour wheel and those on the segment 50, and hence the movement of the platen will simultaneously print the key-indication together with the month, date and hour of its use, it being understood that the hour and

minute could be indicated by proper subdivision of the type-faces on the edge of the hour wheel.

What is claimed as new is:

1. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, a portion of the slide being tapered; of the bolt, a key-indicator, and means for actuating both by the rotation of the slide in either direction.

2. In a recording-lock, the combination with keys of different lengths, a main tumbler having a non-circular hole, and a slide shaped to fit said hole and adapted to be pressed inward to different extents by various keys, its inner end being tapered; of the bolt moved in either direction by the rotation of said tumbler, and a key-indicator controlled by the extent to which the slide is borne inward.

3. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, its inner end being tapered and one side cut away, and a bolt actuated by the rotation of the slide; of a key-indicator, and a controlling bar connected therewith and standing adjacent said cut-away portion of the slide when the bolt is at either extreme of its movement.

4. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, its inner end being tapered and its tip being reduced, a spring engaging this tip to press the slide normally outward, a tumbler through which the slide moves, and means for rotating the tumbler and slide in unison; of the bolt actuated by the rotation of the tumbler, and a key-indicator controlled by the extent to which the slide is borne inward and operated by its rotation.

5. In a recording-lock, the combination with a slide adapted to be borne inward to various extents, and an indicator controlled by the extent to which the slide is borne inward; of a bolt, and means for actuating both the indicator and bolt by the rotation of the slide in either direction.

6. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of a key, and a key-indicator controlled by the extent to which the slide is borne inward; of a bolt, and means for actuating both the indicator and the bolt by the rotation of the slides in either direction.

7. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, and a key-indicator controlled by the extent to which the slide is borne inward; of the bolt, and means for actuating both the indicator and the bolt by the rotation of the slide in either direction.

8. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, an indicator controlled by the extent to which the slide is borne inward; the bolt, and a bolt-stop; of means for operating the indicator, then tripping the stop, and finally actuating the bolt by the rotation of the slide.

9. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, a key-indicator controlled by the extent to which the slide is borne inward, the bolt, and a bolt-stop; of means for operating the indicator, then tripping the stop, and finally actuating the bolt by the rotation of the slide in either direction.

10. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, a key-indicator controlled by the extent to which the slide is borne inward, the bolt, and a bolt-stop; of a tumbler embracing the slide, and connections whereby when these elements are rotated in either direction said indicator is set, then the stop is tripped and finally the bolt is moved.

11. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, a key-indicator controlled by the extent to which the slide is borne inward, the bolt, and a bolt-stop; of a tumbler embracing the slide and having a lug, a projection on the stop adapted to be engaged by this lug, and connections whereby in the rotation of the tumbler and slide in either direction said indicator is set, then the stop is tripped, and finally the bolt is moved.

12. In a recording-lock, the combination with a slide adapted to be borne inward to various extents by the insertion of keys of different lengths, a key-indicator controlled by the extent to which the slide is borne inward, the bolt, and a bolt-stop; of a tumbler embracing the slide and having a lug, a projection on the stop adapted to be engaged by this lug, and a bar leading from the indicator to the slide whereby on the rotation in either direction of the tumbler and slide the latter will set the indicator, then the lug will trip the stop, and finally the bolt will be moved.

13. In a recording-lock, the combination with the recording mechanism including the indicating mechanism with its type, a platen, the ink-ribbon feed, and the paper-strip feed; of a single operating mechanism for both said feeds, lock mechanism including a bolt, and means for actuating said operating mechanism by said lock mechanism prior to the movement of the bolt in either direction.

14. In a recording-lock, the combination with the recording mechanism including the indicating mechanism with its type, the platen, the ink-ribbon feed, and the paper-strip feed; of ratchet and retaining pawls for said feeds, a single operating mechanism connected with both said ratchets, lock mechanism including a bolt, and means for actuating said operating mechanism by said lock mechanism prior to the movement of the bolt in either direction.

15. In a recording-lock, the combination with the bolt, means for moving it, and the imprinting mechanism actuated by the movement of the bolt in either direction; of an indicator coöperating with the imprinter and set by said means, and an aliner for steadying the indicator, the aliner being actuated by the bolt.

16. In a recording-lock, the combination with the bolt, means for moving it, and the imprinting mechanism actuated by the movement of the bolt in either direction; of an indicator coöperating with the imprinter and set by said means, the indicator having notches, and an aliner adapted to engage said notches for steadying the indicator, the aliner being controlled by said means.

17. In a recording-lock, the combination with the bolt, means for moving it, and the imprinting mechanism actuated by the movement of the bolt in either direction; of a key-indicator coöperating with the imprinter and set by said means, a time-indicator also co-operating with said imprinter, and an aliner controlled by said means for alining the key-indications with the time-indications.

18. In a recording-lock, the combination with the bolt, means for moving it, and the imprinting mechanism actuated by the movement of the bolt in either direction; of a key-indicator coöperating with the imprinter and set by said means, a time-indicator also co-operating with said imprinter, mechanism for moving the time-indicator independently, and an aliner controlled by said means for alining the key indications with the time indications.

19. In a recording lock, a locking bolt, means for moving it in both directions, printing and recording mechanism actuated by the bolt moving means, an escapement wheel, an escapement coacting with said wheel and having a point, a clock, a lever adapted to be rocked by the clock, and a latch on the lever adapted to pass the point in one direction, and to engage it in the opposite direction to actuate the escapement.

20. In a recording machine, the actuating, the printing, and the time-recording mechanism, the latter having an escapement wheel; combined with an escapement co-acting with said wheel and having a point, a clock, a lever swung by the clock, and a spring-actuated latch on the lever beveled to permit it to pass behind the point as the lever swings in one direction but to travel up the incline of the point and to actuate the escapement as the lever swings in the other direction.

21. In a recording lock for doors or other closures, a locking bolt, the actuating, the printing, and the recording mechanism, the latter including several wheels having dials and adapted to be set by hand and an hour wheel, and a clock for driving the hour wheel; combined with a spiral cam on the hour wheel, an operating pawl on the next wheel, and a hook connected with the pawl and engaged by the cam.

22. In a recording lock for doors or other closures, a locking bolt, the actuating, the printing, and the recording mechanism, the latter including several wheels having dials and adapted to be set by hand and an hour wheel having a dial, an escapement wheel on whose shaft the hour wheel is frictionally mounted, a clock for driving the escapement, and a spiral cam on said shaft; combined with an operating pawl on the next wheel, and a hook connected with the pawl and engaged by the cam.

23. In a recording-lock, the bolt, a tumbler for moving it, a slide through the tumbler, and a key for setting the slide and turning the tumbler and the slide; combined with an indicator and an imprinter, and mechanism for operating them through the rotation of the tumbler in either direction.

24. In a recording-lock, the bolt, a tumbler for moving it, a slide through the tumbler, and a key for setting the slide and turning the tumbler and the slide; combined with an indicator, an imprinter, and a feed, and mechanism for operating them through the rotation of the tumbler in either direction.

25. In a recording lock, the bolt, a tumbler for moving it, a slide through the tumbler, and a key for setting the slide and turning the tumbler and the slide; combined with a key-indicator, an imprinter, mechanism for operating them through the rotation of the tumbler in either direction, a time-indicator co-acting with the imprinter, and a clock for driving it independently.

26. In a recording-lock, the bolt, a tumbler for moving it, a slide through the tumbler, and a key for setting the slide and turning the tumbler and the slide; combined with a key-indicator, a feed, an imprinter, mechanism for operating them through the rotation of the tumbler in either direction, a time-indicator co-acting with the imprinter, and a clock for driving it independently.

27. In a recording-lock, the combination with the time-indicator including month, date, and hour wheels, and the key-indicator including a segment having printing characters alined with those on said wheels; of

a key, the bolt, and printing mechanism operated by the movement of the bolt in either direction.

28. In a recording-lock, the combination with the time-indicator including month, date and hour wheels, and the key indicator including a segment having printing characters alined with those on said wheels; of a key, the bolt, an inker, a feed therefor, a platen, and mechanisms operated by the movement of the bolt in either direction to first move the feed and then move the platen.

29. In a recording-lock, the combination with the time-indicator, including month, date, and hour wheels, and the key-indicator including a segment having printing characters alined with those on said wheels; of a key, the bolt, a tumbler a recording-strip, a feed therefor, a platen, and mechanisms operated by the rotation of the tumbler in either direction to first move the feed and then move the platen.

30. In a recording-lock, the combination with the time-indicator, including month, date, and hour wheels, and the key-indicator including a segment having printing characters alined with those on said wheels; of a key, the bolt, a tumbler, a recording-strip, a feed therefor, an ink ribbon, a feed therefor, a platen, and mechanisms operated by the rotation of the tumbler in either direction to first move both feeds and then move the platen.

31. In a lock, the combination with a differentiating member mounted for rotary movement in both directions, and means for setting it to different positions according to the person operating the lock; of a bolt, a designator, and means for operating both the bolt and the designator by the rotation of said member in either direction.

32. In a lock, the combination with a differentiating member, and means for setting it to different positions according to the persons operating the lock; of a bolt, a designator, and means whereby the rotation of said member in either direction moves the bolt a predetermined distance and moves the designator a variable distance according to the position of said member.

33. In a lock, the combination with a differentiating member, and means for setting it to different positions according to the person operating the lock; of a bolt, a designator comprising a person-indicator and a time-indicator, and means for operating both the bolt and the designator by the rotation of said member in either direction.

34. In a lock, the combination with a differentiating member, and means for setting it to different positions according to the persons operating the lock; of a bolt, a designator comprising a person-indicator and a time-indicator, and mechanism whereby the rotation of said member in either direction moves the bolt a predetermined distance and moves the person-indicator a variable distance according to the position of said member.

35. In a lock, the combination with a differentiating member having a varying dimension, and means for setting it to different positions according to the person operating the lock; of a bolt, a designator, and means for operating both the bolt and the designator by the rotation of said member in either direction.

36. In a lock, the combination with a differentiating member having a varying dimension, and means for setting it to different positions according to the persons operating the lock; of a bolt, a designator, and means whereby the rotation of said member in either direction moves the bolt a predetermined distance and moves the designator a variable distance according to the dimension of said member which its setting has brought into position.

37. In a lock, the combination with a differentiating member having a varying dimension, and means for setting it to different positions according to the person operating the lock; of a bolt, a designator, and means whereby the rotation of said member in either direction will move the bolt a predetermined distance and will move the designator a variable distance according to the dimension of said member which its setting has brought into position.

38. In a lock, the combination with a differentiating member having a varying dimension, and means for setting it to different positions according to the persons operating the lock; of a bolt, a designator comprising a person-indicator and a time-indicator, and mechanism whereby the rotation of said member in either direction moves the bolt a predetermined distance and moves the person-indicator a variable distance according to the position of said member.

39. In a recording lock the combination of a bolt, differentiated means for positively moving the same both into and out of locking position, and means for recording both movements of the bolt and the identity of the particular differentiated means employed.

40. In a recording lock, the combination of a bolt, differentiated means for positively moving the same both into and out of locking position, and mechanism actuated by said means for recording both movements of the bolt and the identity of the particular differentiated means employed.

41. In a recording lock the combination of a bolt, differentiated means for moving said bolt both into and out of locking position, means for recording the movement of

the bolt in both directions and the identity of the particular means employed and means for recording the time of such records.

42. In a lock, the combination with a locking bolt and differentiated means for controlling the movements thereof both into and out of locking position; of means for obtaining a record of both movements of the bolt and of the particular differentiated means employed.

43. In a lock, the combination of a locking bolt, means for controlling the movements thereof both into and out of locking position, a type carrier set to different positions at each actuation of such means in either direction, and means for taking a record from said carrier at each actuation thereof.

44. In a lock, the combination with a locking bolt, and differentiated means for actuating it in both directions, of mechanism for recording the identity of the means employed for actuating said bolt when operated in either direction.

45. In a lock, the combination with a locking bolt, and differentiated means for actuating it in both directions, of mechanism for recording the identity of the actuating means at each actuation thereof, said recording means being operated by said actuating means.

46. In a recording lock, the combination with a closure locking bolt key-controlled in both directions, of a time-recorder, a key-recorder adapted to be set to different positions according to the key employed and in whichever direction the key is operated, and means for taking a record from said time- and key-recorders with each key actuation.

47. In a recording lock, the combination with a recording mechanism including an identifying means, of a locking bolt, key controlled mechanism for setting said identifying means and moving said locking bolt, a platen, and a cam on said locking bolt for operating said platen whether the bolt is advanced or retracted.

48. In a recording lock, the combination with an identifying means and means for making records therefrom, of a slidable bolt and key controlled means for operating the bolt and the record making means in both the locking and unlocking movement of the bolt.

In testimony whereof I have hereunto subscribed my signature this the 15th day of Aug., A. D. 1904.

ALLEN DE VILBISS, JR.

Witnesses:
E. A. DRAKE,
J. H. MUNROE.