No. 785,842. PATENTED MAR. 28, 1905.

F. J. VIEWEG.

LOCK.

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Fig. 1

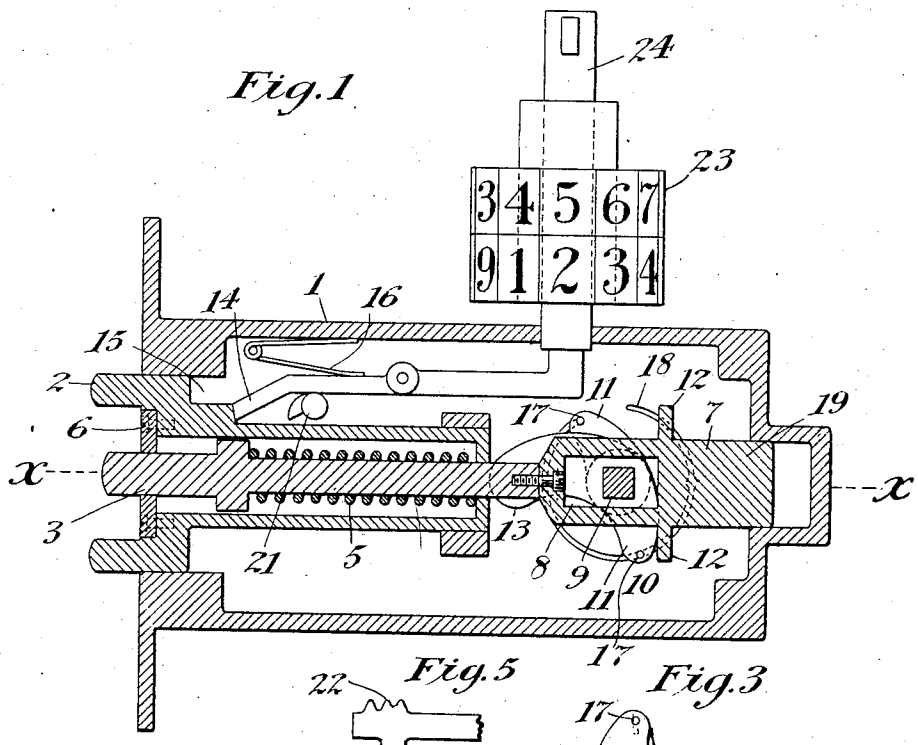


Fig. 5

Fig. 3

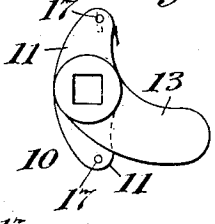


Fig. 4

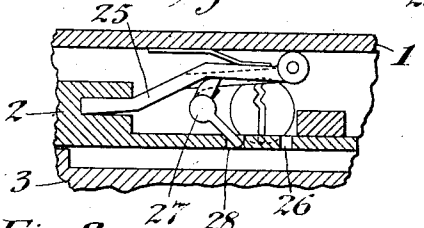
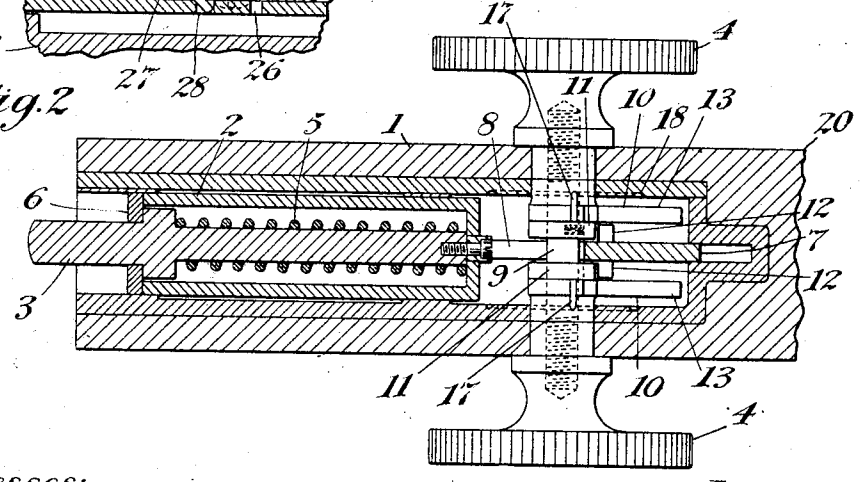


Fig. 2



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UNITED STATES PATENT OFFICE.

FRED J. VIEWEG, OF PLAINFIELD, NEW JERSEY.

LOCK.

SPECIFICATION forming part of Letters Patent No. 785,842, dated March 28, 1905.

Application filed April 28, 1903. Serial No. 154,695.

To all whom it may concern:

Be it known that I, FRED J. VIEWEG, a citizen of the United States of America, and a resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to locks; and its object is to simplify the construction of locks in such a way that the main bolt and supplementary bolt can be constructed and arranged so as to be operated from a single knob, whereby less space will be occupied by the lock and whereby a positive and convenient mechanism will be produced.

To this end my invention comprises the arrangement of parts and features of construction as above noted and others which will more fully hereinafter appear.

In the drawings, Figure 1 represents a vertical sectional view through the center of the lock embodying my invention. Fig. 2 is a transverse sectional view in the line X X of Fig. 1. Fig. 3 is a detail view of the cam for operating the device. Fig. 4 is a broken vertical sectional view of Fig. 2, showing a modification. Fig. 5 is a detailed view of the key used in connection with the modification shown in Fig. 4.

Similar numerals of reference indicate corresponding parts in the different views.

1 indicates a casing containing the parts comprising the lock.

2 indicates the main bolt, and 3 the supplementary bolt, both adapted to be operated from the knob 4. As shown in the drawings, one of the bolts is preferably located inside the other, in the present instance the supplementary bolt being the inner one and the main bolt the outer one. In the particular arrangement shown here the inner or supplementary bolt is normally held in its closed position by the spring 5, while the main bolt is normally held in its open position by the same means. The arrangement of having a single means to normally hold both bolts, respectively, in their closed and open position is convenient, but not necessary, as each one could have a means independent of the other. The collar 6 serves to limit the movement of the bolts in opposite directions.

The knob 4 is provided with connections, whereby it is adapted to move the main bolt into its closed position, but is not adapted to return it to its open position. Means are further provided for maintaining the bolt in its closed position, said means being released by a key or other device independent of the knob. The knob is further adapted to withdraw at all times the supplementary bolt into its open position independently of the main bolt—that is, without changing the position of the said main bolt—and, finally, the knob is adapted when uninterruptedly operated to withdraw the supplementary bolt and to close the main bolt, the main bolt remaining in its closed position and the supplementary bolt returning to its closed position. The means for accomplishing the foregoing can of course be widely varied, but are preferably constructed as follows: The supplementary bolt 3 is provided with a rearwardly-extending portion 7, having a slot 8, through which extends the unbroken square shaft 9, having a knob 4 on each side of the door. As previously pointed out, the spring 5 normally holds the supplementary bolt in its closed position and the main bolt in its open position. 10 is a cam mounted on the shaft 9, having a surface 11, which when the knob is turned a distance engages with the lug 12 on the portion 7 to open the supplementary bolt. The cam 10 is further provided with a second surface 13, engaging with the end of the main bolt when the knob is turned another distance to close the said main bolt. As soon as the main bolt has been moved into its closed position the dog 14 drops down and out of the aperture 15 in the main bolt by reason of the spring 16, preventing the return of the said main bolt. The supplementary bolt will then of course also move into its closed position by reason of the spring 5. The surface 11 of the cam 10 is provided with a spring-seated pin 17, traveling in the groove 18 of the casing, said groove having a depression 19, so that the operator can determine when the knob has been turned the proper distance to

open the supplementary bolt in case it is desired to open the said supplementary bolt and not to close the main bolt. It is preferable that the supplementary bolt should be capable of being operated when the knob is turned in either direction, and to that end there are provided two surfaces 11 for opening the said supplementary bolt. To obtain an even movement, there are two of the cams 10—one on each side of the rearwardly-extending portion 7. The main bolt is opened from the inside of the door 20 by means of a cam 21, which when turned serves to lift the dog 14, thereby releasing the said main bolt, allowing it to return to its open position. Any other means could of course be used. To open the main bolt from the outside of the door, various means can be used. In Fig. 1 I have shown a combination device 23 of any suitable construction, which when the proper combination is struck will admit of the rod 24 being pushed down, thereby lifting the dog 14. In Fig. 4 I have shown a number of dogs 25 of different forms adapted to be lifted by a key corresponding therewith. In this instance the key 22 can be provided with a lug 29, engaging with a notch 26 in the main bolt, so as to draw the bolt positively. Likewise the cam 27, which is operated from the inside of the door, can be provided with a lug entering the notch 28 in the bolt, so that it can be drawn positively from the inside also.

By the term "main bolt" is meant the bolt which is used to lock the door and by the term "supplementary bolt" is meant the bolt used to keep the door shut.

From the foregoing it will be seen that the main bolt can be locked both from the inside and the outside of the door by turning the knob and that on the inside of the door there are means, as a knob, for opening said bolt capable of being operated at all times; but that only means, as a key or a combination device, will open the main bolt from the outside. The supplementary bolt can of course be opened both from the outside and from the inside at all times by the knob.

Having thus described my invention, what I claim is—

1. In a lock, the combinaton with two bolts, of a common operating means for both capable of withdrawing one bolt independently of the other at all times.

2. In a lock, the combination with two bolts, one of which is normally held in its closed position, of a common operating means for both capable of withdrawing the normally closed bolt independently of the other at all times.

3. In a lock, the combination with two bolts, of means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, and a knob and connections for withdrawing the normally closed bolt when turned a distance, and for closing the normally open bolt when turned another distance.

4. In a lock, the combination with two bolts, means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, and a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt.

5. In a lock, the combination with two bolts, of means for normally holding one bolt in its closed position and the other bolt in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, and means for determining when the knob has been turned the proper distance.

6. In a lock, the combination with two bolts, of means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, and means whereby the bolt so closed will remain in its closed position.

7. In a lock, the combination with two bolts, of means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt, and means whereby the bolt so closed will remain in its closed position.

8. In a lock, the combination with two bolts, of means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt, and means whereby the bolt so closed will remain in its closed position and the bolt so opened will return to its closed position.

9. In a lock, the combination with two bolts, means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, means for determining when the knob has been turned the proper distance, and means whereby the bolt so closed will remain in its closed position.

10. In a lock, the combination with two bolts, means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another

distance, means for determining when the knob has been turned the proper distance, and means whereby the bolt so closed will remain in its closed position and whereby the bolt so opened will return to its closed position.

11. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, and a knob and connections for withdrawing the normally closed bolt when turned a distance, and for closing the normally open bolt when turned another distance.

12. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, and a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to lock the normally open bolt.

13. In a lock, the combination with two bolts, of a single means for normally holding one bolt in its closed position and the other bolt in its open position, a knob and connection for withdrawing the normally closed bolt when turned a distance and for locking the normally open bolt when turned another distance, and means for determining when the knob has been turned the proper distance.

14. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, and means whereby the bolt so closed will remain in its closed position.

15. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, and means whereby the bolt so closed will remain in its closed position and the bolt so opened will return to its closed position.

16. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt, and means whereby the bolt so closed will remain in its closed position.

17. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt, and means whereby the bolt so closed will remain in its closed position and the bolt so opened will return to its closed position.

18. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, means for determining when the knob has been turned the proper distance, and means whereby the bolt so closed will remain in its closed position.

19. In a lock, the combination with two bolts, of a single means for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, means for determining when the knob has been turned the proper distance, and means whereby the bolt so closed will remain in its closed position and whereby the bolt so opened will return to its closed position.

20. In a lock, the combination with two bolts, one of which is located inside of the other, of a common operating means for both capable of withdrawing one bolt independently of the other at all times.

21. In a lock, the combination with two bolts, one of which is located inside of the other and one of which is normally held in its closed position, of a common operating means of both capable of withdrawing the normally closed bolt independently of the other at all times.

22. In a lock, the combination with two bolts, one of which is located inside of the other of a spring for normally holding one bolt in its closed position and the other bolt in its open position.

23. In a lock, the combination with two bolts, one of which is located inside of the other of a spring for normally holding one of said bolts in its closed position and the other bolt in its open position, and a knob and connections for withdrawing the normally closed bolt.

24. In a lock, the combination with two bolts, one of which is located inside the other, of a spring for normally holding one of said bolts in its closed position and the other bolt in its open position, and a knob and connections for withdrawing the normally closed bolt and for closing the normally open bolt.

25. In a lock, the combination with two bolts, one of which is located inside the other, of a spring for normally holding one of said bolts in closed position and the other of said bolts in its opened position, and a knob and

connections for withdrawing the normally closed bolt when turned a distance, and closing the normally open bolt when turned another distance.

26. In a lock, the combination with two bolts, one of which is located inside the other, of a spring for normally holding one of the said bolts in its closed position and the other of said bolts in its open position, and a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt.

27. In a lock, the combination with two bolts, one of which is located inside the other, of a spring for normally holding one bolt in its closed position and the other bolt in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance, and for closing the normally open bolt when turned another distance, and means for determining when the knob has been turned the proper distance.

28. In a lock, the combination of two bolts, one of which is located inside the other, of a spring for normally holding one of said bolts in its closed position and the other bolt in its open position, a knob and connections for withdrawing the normally closed bolt and for closing the normally open bolt, and means whereby the bolt so closed will remain in its closed position.

29. In a lock, the combination with two bolts, one of which is located inside of the other, of a spring for normally holding one of said bolts in its closed position and the other bolt in its open position, a knob and connections for withdrawing the normally closed bolt and for closing the normally open bolt, and means whereby the bolt so closed will remain in its closed position and whereby the bolt so opened will return to its closed position.

30. In a lock, the combination with two bolts, one of which is located inside of the other, of a spring for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, and means whereby the bolt so closed will remain in its closed position.

31. In a lock, the combination with two bolts, one of which is located inside of the other, of a spring for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, and means whereby the bolt so closed will remain in its closed position and the bolt so opened will return to its closed position.

32. In a lock, the combination with two bolts, one of which is located inside of the other, of a spring for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt, and means whereby the bolt so closed will remain in its closed position.

33. In a lock, the combination with two bolts, one of which is located inside of the other, of a spring for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections which when uninterruptedly operated serves first to open the normally closed bolt and then to close the normally open bolt and means whereby the bolt so closed will remain n its closed position and the bolt so opened will return to its closed position.

34. In a lock, the combination with two bolts, one of which is located inside the other, of a spring for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally open bolt when turned another distance, means for determining when the knob has been turned the proper distance, and means whereby the bolt so closed will remain in its closed position.

35. In a lock, the combination with two bolts, one of which is located inside the other, of a spring for normally holding one of said bolts in its closed position and the other of said bolts in its open position, a knob and connections for withdrawing the normally closed bolt when turned a distance and for closing the normally opened bolt when turned another distance, means for determining when the knob has been turned the proper distance, and means whereby the bolt so closed will remain in its closed position and whereby the bolt so opened will return to its closed position.

36. In a lock, the combination with two bolts, one of which is located inside the other, of means for withdrawing each bolt independently of the other.

37. In a lock, the combination with two bolts, one of which is located inside the other, of a cam adapted to move said bolts in opposite directions.

38. In a lock, the combination with two bolts, one of which is located inside of the other, of a cam adapted to open one of said bolts and to close the other of said bolts.

39. In a lock, the combination with two bolts, one of which is located inside the other, of a shaft extending through the inner bolt, two cams mounted on said shaft one on each side of the inner bolt and adapted to act in conjunction on both of said bolts.

40. In a lock, the combination with a bolt of a knob and connections adapted to move

said bolt into its closed position but not adapted to return it to its open position and means for maintaining the bolt in its closed position adapted to be released independently of the knob.

41. In a lock, the combination with two bolts, of a knob and connections whereby one of said bolts can be opened from the knob on either side of the door, and whereby the other of said bolts can be closed from the same knob on either side of the door, and means on the inside of the door for opening the second bolt at all times, and means whereby the said second bolt can be opened from the outside by means of a key.

42. In a lock, the combination with the bolt a spring for normally holding said bolt in its open position, means for moving said bolt into its closed position from its open position, one or more dogs for maintaining said bolt in its closed position, and a key adapted to lift said dogs, and adapted further to engage with said bolt to move it into its open position.

43. In a lock, the combination with a bolt, of means for moving said bolt into its closed position from its open position, one or more dogs for maintaining said bolt in its closed position, and a key adapted to lift said dogs, and adapted further to engage with said bolt to move it into its open position.

Signed at New York this 25th day of April, 1903.

FRED J. VIEWEG.

Witnesses:
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