L. OLSON.

LOCK.

APPLICATION FILED OCT. 28, 1916.

1,267,894.

Patented May 28, 1918.

2 SHEETS—SHEET 1.

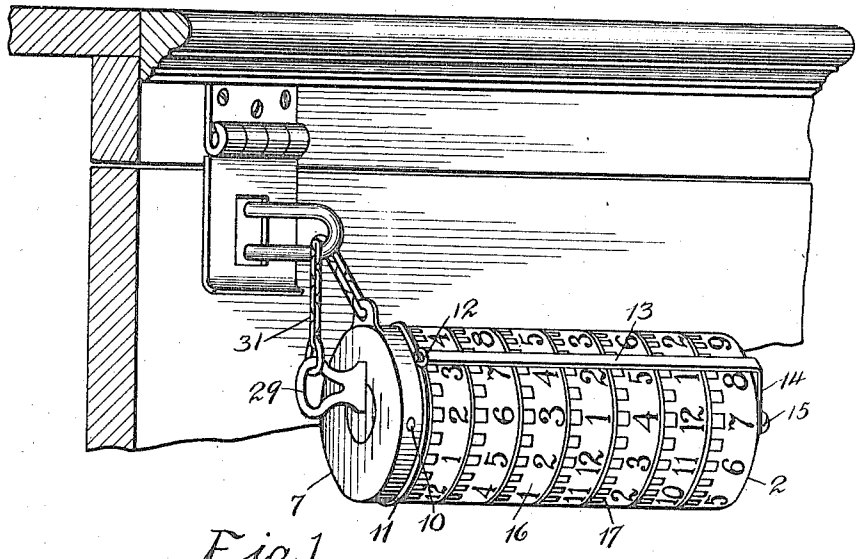


Fig. 1.

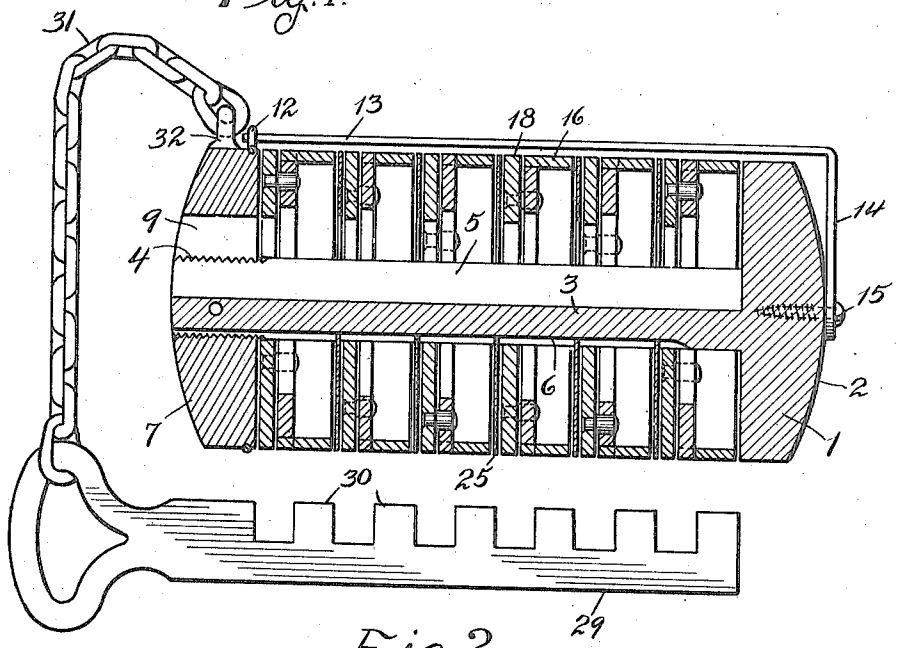


Fig. 2.

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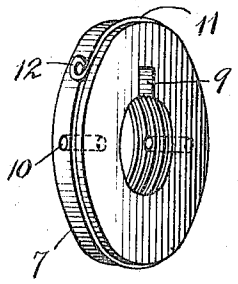
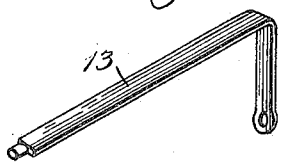


Fig. 3.

Fig. 4.



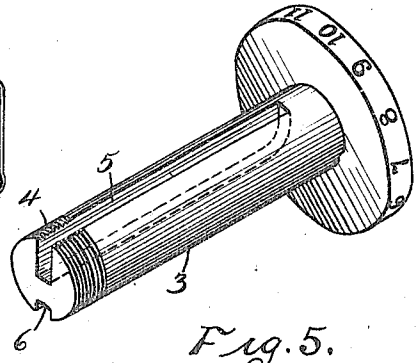


Fig. 5.

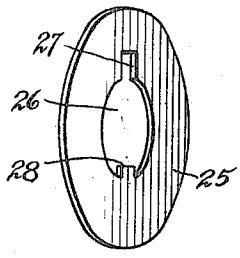


Fig. 6.

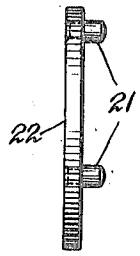


Fig. 7.

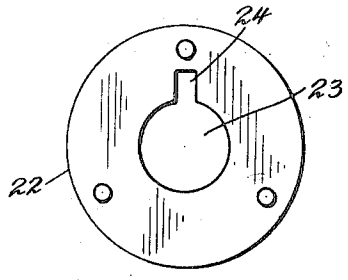


Fig. 8.

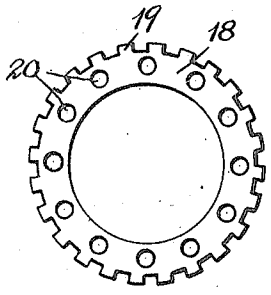


Fig. 9.



Fig. 10.

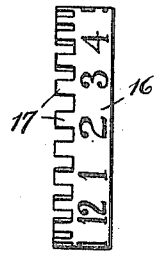


Fig. 11.

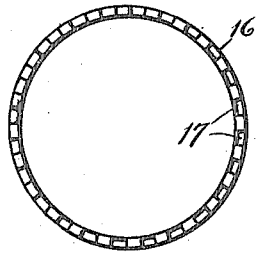


Fig. 12.

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UNITED STATES PATENT OFFICE.

LARS OLSON, OF WINNIPEG, MANITOBA, CANADA.

LOCK.

1,267,894. Specification of Letters Patent. Patented May 28, 1918.

Application filed October 28, 1916. Serial No. 128,234.

To all whom it may concern:

Be it known that I, LARS OLSON, a citizen of Canada, residing at Winnipeg, in the Province of Manitoba and Dominion of Canada, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention relates to improvements in locks and more particularly to permutation padlocks. The lock comprises a plurality of rotary tumblers arranged between a screw cap and base upon a pintle which is integral with the base and adapted for releasable engagement with the screw cap. An indicator rod pivotally secured to the base extends to the screw cap and may serve to indicate the combination which, when known, will permit the withdrawal of the shackle to open the lock. In the accompanying drawings which form a part of this specification and in which like reference characters denote corresponding parts—

Figure 1 is a perspective view of the lock locked and showing its application.

Fig. 2 is a longitudinal sectional view through the lock with the shackle withdrawn.

Figs. 3 to 12 inclusive are details of the various parts of the lock.

The reference numeral 1 denotes one end of the lock which may be termed the base and is formed with one convex face 2 and with the integral pintle 3 which is circular in cross section and threaded at 4 at one end and formed with the deep longitudinal groove 5 and with the shallow longitudinal groove 6 diametrically opposite the first named groove. A cap 7 formed with a threaded central opening and with a groove 9 opening thereinto is adapted for engagement with the threaded end of the pintle 3 to which it is ordinarily further secured by pins which lie in the pin-cavities 10. A wire band 11 encircles the cap 7 and is formed with an eye 12 adapted to retain the pintle 13 of an angular indicator rod 14 which is pivoted upon a pin 15 embedded in the center of the said base 1. A plurality of crown-shaped tumbler members 16 having toothed peripheries 17 are provided with the crown rings 18 having teeth 19 about their outer peripheries which latter teeth are adapted to lie between the teeth 17 of said tumblers to retain said crown rings in place. The crown rings, further, are formed with a plurality of circular perforations 20 adapted to receive the pegs 21 of the cap rings 22 which lie directly upon said crown rings and are each formed with a central opening 23 into which a groove 24 opens. A complete rotary tumbler, of which there are several, comprises one crown shaped member 16, crown ring 18 and cap ring 22 and the several tumblers are separated from each other by the fixed washers 25 which are formed with central openings 26 into which grooves 27 open and into which central openings lugs 28 project, said lugs being adapted to engage with the grooved portion 6 of the spindle 3 to lock the washers against rotation.

A key-shaped shackle 29 having lugs 30 is adapted for insertion in the grooved portion 5 of the spindle and through the grooves 9, 24, 27 of the cap, cap rings and washers respectively when those grooves are alined. The shackle is secured by chain 31 to an ear 32 formed on the said cap 7. Each tumbler-member 16 carries upon its outer face the numerals from 1 to 12 (or other characters) which are readable in connection with the indicator rod 14 when that rod is moved against the tumbler faces as shown in Fig. 1. The numbers that appear first to the left of the indicator rod upon the several tumblers form the combination that will permit the withdrawal of the shackle, that is the tumbler at the top has been found to have its grooves 24, 27 alined with the groove 9 of the cap 7 when the numeral 3 is the first number to the left of the indicator rod; the grooves in the next tumbler are alined with the similar grooves thereabove when the number 7 is first to the left of the indicator rod and so on with the several tumblers. To lock the lock the shackle is inserted when the several tumblers have been properly positioned with their slotted portions in alinement and then one or more tumblers rotated thereby positioning one or more of the slotted portions 24, 27 out of alinement and preventing withdrawal of the shackle. The indicator bar serves as an exterior alining device by means of which the respective positions of the several tumblers is instantly discerned.

What is claimed is:—

1. A permutation lock comprising a base, a longitudinally slotted spindle integral with said base, a cap adapted for engagement with said spindle and formed with a grooved

portion, a band encircling said cap and formed with an eye, rotary tumblers spaced away from each other upon said spindle and formed with grooved portions which may be alined with each other and with the grooved portion of said cap, a shackle insertible into the groove in said pintle and formed with lugs for insertion through the grooved portions of said cap and rotary tumblers when they are alined and a rod pivotally connected to said base and to the said eye and movable and readable with relation to said tumblers.

2. A permutation lock comprising a base, a spindle integral therewith and formed with diametrically opposed longitudinally slotted portions, a grooved cap adapted for engagement with said spindle, crown shaped toothed members encircling said spindle, apertured toothed crown rings carried by said crown shaped members, the teeth of said last named members being in mesh with each other; cap rings carried by said crown rings and formed with pegs for engagement with the apertured portions of said crown rings and with grooved portions adapted to be alined with each other and with the groove in said cap, washers separating said crown shaped members and cap rings and formed with grooves adapted for alinement with each other and with the grooves in said cap rings and cap and with lugs adapted to register with one of the longitudinally grooved portions of said spindle, a shackle insertible into the groove in said pintle and formed with lugs for insertion through the grooved portions of said cap, washers, and cap rings when they are alined and an indicator rod pivotally carried by said base and readable in connection with said crown shaped members.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two subscribing witnesses.

LARS OLSON.

Witnesses:
G. L. LENNOX,
H. A. BERGMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."