

(No Model.)

J. J. DEAL.
PERMUTATION PADLOCK.

No. 490,784.

Patented Jan. 31, 1893.

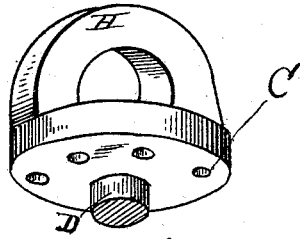


Fig. 6.

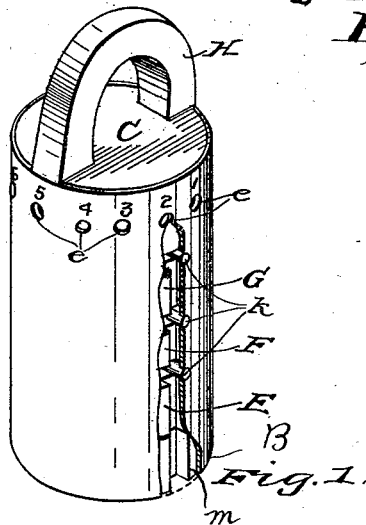


Fig. 1.

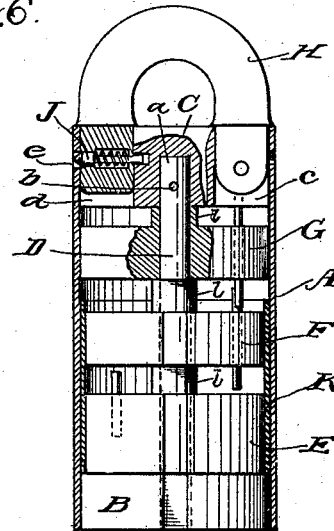


Fig. 2.

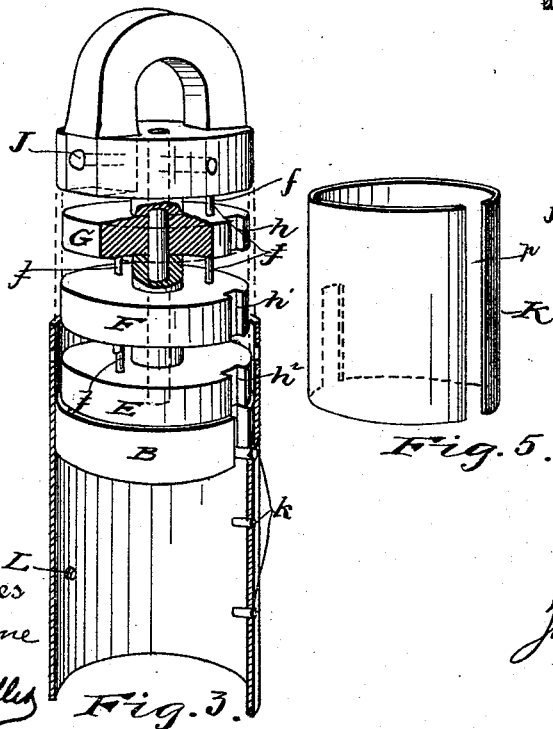


Fig. 3.

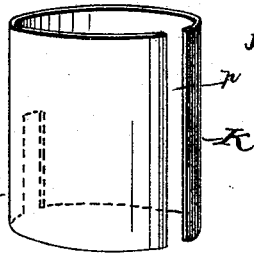


Fig. 5.

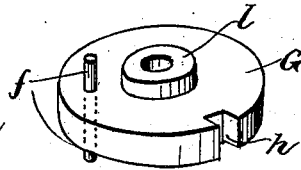


Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

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PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 490,784, dated January 31, 1893.

Application filed July 11, 1892. Serial No. 439,629. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH J. DEAL, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have
5 invented a new and useful Improvement in Commutation-Padlocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

10 My invention relates to an improvement in commutation padlocks, and consists in providing a lock of tubular form having a series of tumblers that rotate about a central shaft transverse the tubular case, to lock the shackle
15 within the case.

With these ends in view, my invention relates to certain features of construction and combination of parts as will be hereinafter described and pointed out in the claims.

20 Figure 1 of the accompanying drawings is a perspective of a padlock representing my invention having a portion of the case cut away to show the tumblers and locking pins in unlocked position. Fig. 2 a longitudinal
25 section partly in perspective. Fig. 3 is a view partly perspective and partly sectional showing the tumblers partly withdrawn from the case. Fig. 4 a perspective of one of the tumblers and: Fig. 5 a similar view of a spring
30 to hold the tumblers in desired position. Fig. 6 is a detailed perspective.

Similar letters of reference indicate corresponding parts in all of the figures of the drawings.

35 The object sought by the construction hereinafter described, is to provide a lock structure of a keyless tumbler form adapted for a range of sizes of lock, varying from one fourth of an inch in diameter and one half in length
40 to the size shown by the drawings, or larger if desired.

Referring to Fig. 2, A represents the inclosing case which is of cylinder or tubular form, in which are fitted two heads B and C, the former supporting a shaft D, on which are loosely
45 mounted the locking tumblers E, F and G, the other end of the shaft is passed into a central aperture a in the head C and secured by a pin b. The shackle H has one of its ends
50 pivotally secured in a recess c provided in the head C, the other or free end adapted to pass into a similar recess d, diametrically opposite

the pivot above referred to. In the free end of the shackle is provided a transverse spring bolt J, which serves a two fold purpose, the
55 outer end being conical, will when the case A is turned or rotated about the heads B and C, drop a distance into the perforations e in the case to produce a slight check to the movement and a click or sound, by which the op-
60 erator may be directed in operating the lock, the inner end of the bolt to pass into an aperture in the head which assists in retaining the shackle in the head when closed in the case.

On the shaft D are placed the tumblers E, 65 F and G, each of which is provided with the usual turn pin f and is operated in the usual way; to turn the tumblers to bring the peripheral notches h to register one with the other, to allow the tumblers to pass the locking pins
70 k as shown in Fig. 3. the tumblers are spaced apart by the hub or washer l. On the under side or inside of the head C is provided any desired number of perforations to receive the pin f in tumbler G, by which the combination
75 of numbers or letters on which the parts are locked may be changed. There is also provided in the periphery of the head B, a groove m through which the pins k may pass to permit the tumblers and heads to be drawn from case.
80 The pin f passing through the tumbler G, one end of which will enter an aperture on the head C, the other to engage the pin f in the tumbler F. The tumblers E and F are diametrically smaller than the head B and case
85 to provide space for the spring K which serves as a brake on the tumblers E and F. The spring or brake K is held in position, or against rotation by the screw L and pins k. To regulate the longitudinal movement of the tumblers and heads, screw L is provided which
90 projects into the case to limit the longitudinal movement of the locking parts in the case, it passing into the slot p in the spring K, and engaging the head B, and to remove the parts
95 from the case the screw must be turned back to allow the head B to pass. The shoulders on the shackle will engage or strike the end of the case to stop the inward movement.

To operate the lock, the shackle is held 100 either by the staple through which it is passed, or by the fingers, the case turned back and forth to work out the combination which has been previously arranged and is understood

by the operator, to bring the slots h h' and h^2 in line as shown in Fig. 3, when the head C may be drawn out of the case to release the shackle. To lock the shackle in the case, re-
5 turn the free end into the head C, press the head into and turn the case to distribute the tumblers.

Having thus described the nature and object of my invention, what I claim and de-
10 sire to secure by Letters Patent is:

1. The combination in a commutation padlock of a cylindrical case whose diameter is less than the length thereof, of a series of locking pins arranged longitudinally and pro-
15 jecting therein, and the tumblers having engaging pins, and peripheral grooves, substantially as described and for the purpose set forth.

2. The combination with the tubular inclosing case, having inwardly projected locking pins and a stop screw, of the sliding heads B

and C, the tumblers interjacent the heads to rotate transverse the tubular case, and the spring brake K to embrace the tumblers h' and h^2 to hold them in desired position, sub-
25 stantially as described and for the purpose set forth.

3. The combination in a commutation lock of the tubular case, having inwardly projected locking pins and perforations e , of the head
30 B, having secured therein a shaft projected therefrom through the case, tumblers to rotate on said shaft transverse the case, the head C, shackle H and spring bolt J, substantially as described and for the purpose set
35 forth.

In testimony whereof I have hereunto set my hand this 2d day of July, A. D. 1892.

JOSIAH J. DEAL.

Witnesses:

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CHAS. R. MILLER.