

(Model.)

2 Sheets—Sheet 1.

T. D. MORRIS.
COMBINATION LOCK.

No. 452,887.

Patented May 26, 1891.

Fig. 2.

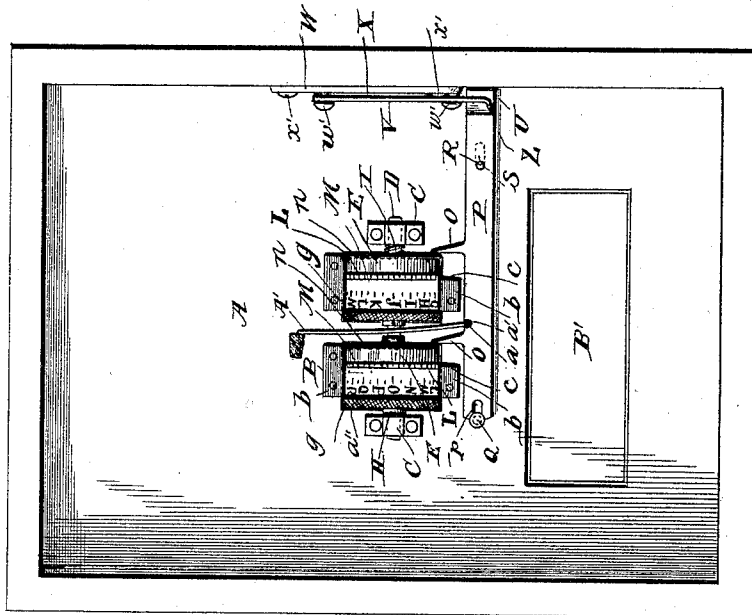
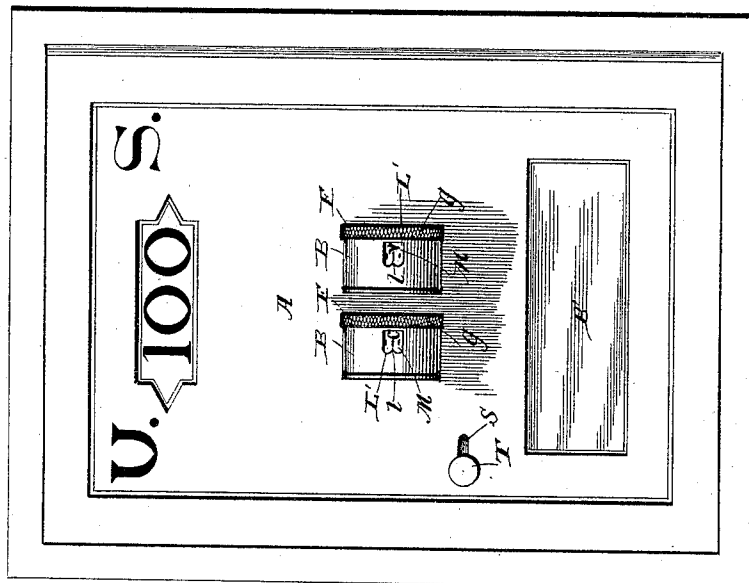


Fig. 1.



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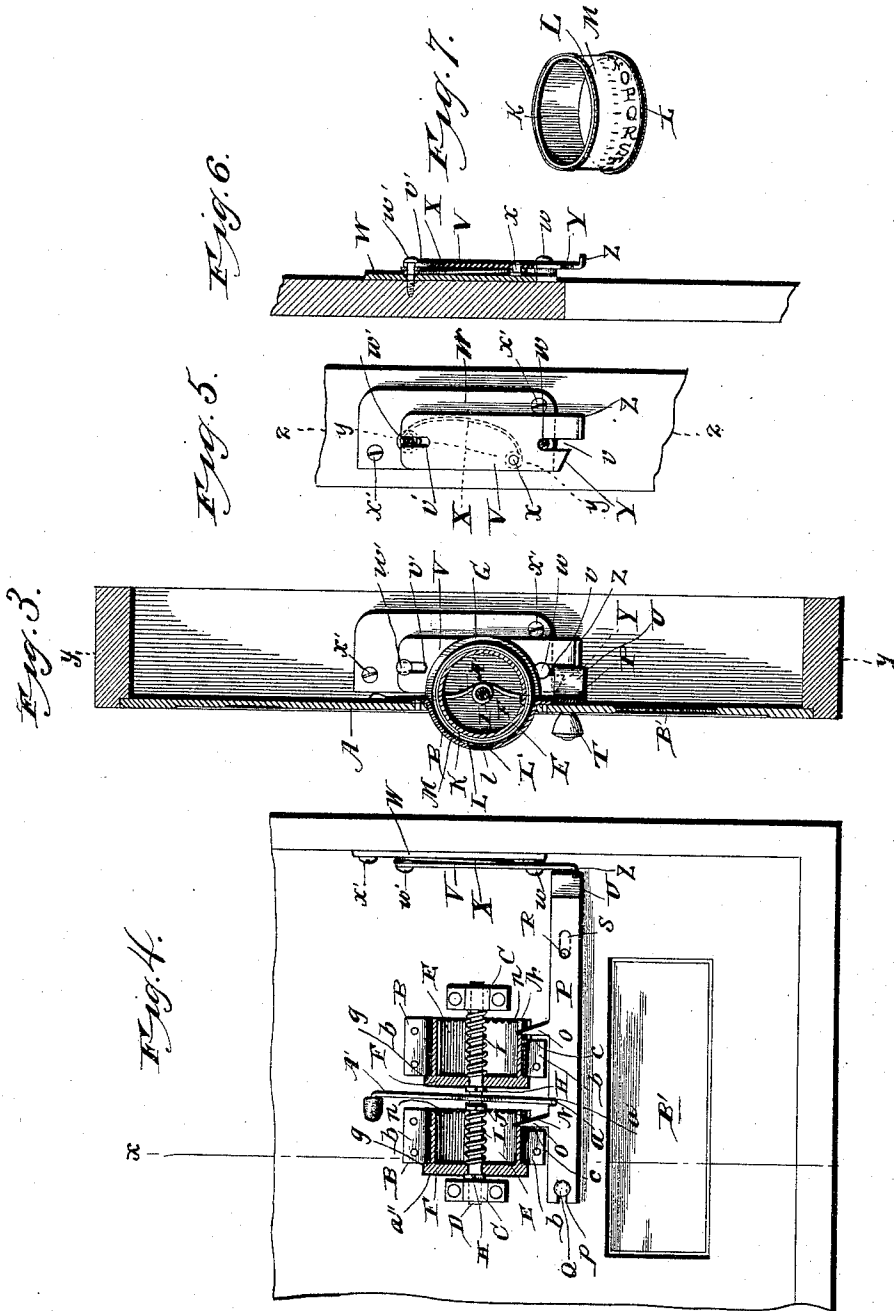
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2 Sheets—Sheet 2.

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COMBINATION LOCK.

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Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS D. MORRIS, OF SEWARD, NEBRASKA.

COMBINATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 452,887, dated May 26, 1891.

Application filed August 16, 1890. Serial No. 362,224. (Model.)

To all whom it may concern:

Be it known that I, THOMAS D. MORRIS, of Seward, Seward county, Nebraska, have invented certain new and useful Improvements in Cylinder Combination-Locks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in cylinder combination-locks; and it consists in the peculiar combination and arrangement of devices that will be hereinafter fully specified and claimed.

My object is also to provide a lock in which the combination may be readily and easily changed, to be applied, preferably, to post-office boxes, &c., and which is cheap, ornamental, and durable of construction and effective in operation.

Referring to the drawings which illustrate this invention, Figure 1 is a face view of the letter-box door, showing the combination C, V and ready to be unlocked. Fig. 2 is a rear view of Fig. 1. Fig. 3 is a vertical sectional view taken on a line *xx* of Fig. 4. Fig. 4 is a vertical sectional view taken on a line *yy* of Fig. 3. Fig. 5 is a face view of the locking-plate attachment secured to the inner side of the door-frame. Fig. 6 is a vertical sectional view taken on a line *zz* of Fig. 5. Fig. 7 is a detail perspective of the detachable sleeve or thimble carrying the combination numbers or letters. A represents the door having the similar openings *a''*, through which protrude the semicircular plates B, the ends *b* of which are secured by rivets or otherwise to the rear face of the door. Secured in boxes C C transversely across the central portion of the semicircular plates and in rear of the door is the shaft D. Operating in the openings in the door in the rear of the semi-cylindrical plates B are cylindrical casings E, provided with the head portions F, which are journaled on the shaft D. The outer edge projects beyond the cylindrical portion thereof, forming a shoulder *g*, the periphery of which is milled or serrated, the object of which will be hereinafter described.

Secured against the outer side of either head F of the cylindrical casings E and preventing said casings from frictional contact

with the side of the openings *a''* in the door are the collars H.

The springs I, coiled round the shaft D in the interior or hollow portion of the casings E, bear at either end against the inner sides of the heads F of said casings and against the collar J and bearing-boxes C, thus holding the head F against the collars H and preventing said casings E from revoluble movement unless caused by contact with the milled periphery of head F of the casing.

K represents a cylindrical sleeve or thimble to fit upon the cylindrical casing E and bear against the shoulder *g* of the head portion F letters or figures stamped in the outer surface of the thimble or sleeve, or may be placed on paper or suitable material M, as shown in the drawings, which is secured by mucilage or other adhesive material around the said sleeve K, which sleeve or thimble surrounds the casing E, it being revoluble thereon and being held in place by friction.

The sleeve K is provided at one end with the annular flange L milled on its periphery.

N represents the notches in the cylindrical portion of the casing E, adapted to be engaged when unlocked by the aligned projections O of the locking-bar P, which is provided with the slot or notch *p* in its inner end, which slides on the guide-pin or projection Q on the rear face of the door. The casings are also serrated or notched on their inner edges to prevent the finding of notches N by the projections O, if the combination is unknown. A pin R, secured in the bar P near the opposite end, projects through the slot S in the door, and has secured on its forward end the door-button T. The forward end of the bar P is bent rearward and forward at U and engages, when the door is closed, the notch *v* of the plate V. The plate V is provided with the vertically-aligned notches *v'* at its upper end, said notches adapted to operate when plate V is moved on the guide-pins *w* and *w'* of the plate W, which is secured by the screws *x'* to the inner wall of the door-casing. A curved spring X, between the plates V and W, is secured at its upper end round the pin *w'*, and at its lower end round the pin *x*, projecting rearwardly from the plate V.

Secured at its upper end by solder or other-

wise to the rear side of the door is the spring A', which extends downward between the cylindrical casings E and its lower end *a* bent and engaged in notch *a'* of the sliding bar P. The door is also provided with a window B, through which the interior of the box may be observed.

The operation of my lock is as follows: The combination being C-V, as in this case, the cylindrical casings E are turned by frictional contact with the milled or serrated periphery of shoulders *g* of said casings until the point *l* of the openings L' in the semi-cylindrical plates B point directly to the combination letters C-V, when the notches N are in alignment with the projections O of the sliding bar P. The lower ends *b* of the plates B are cut away at *c* to allow the projections O of the bar P to enter the notches N when necessary. The button T is then forced in the direction of the arrow, Fig. 2, to the position shown in Fig. 3. When the forward end U of the bar P is withdrawn from engagement with the notch *v* of the plate V, the door is unlocked and may be opened. To change the combination, the door is unlocked and the projections O of the sliding bar P are in engagement with the notches N in the edge of the cylindrical casings E. The thimbles K, carrying the combination letters or figures, are then caused to revolve by frictional contact with the milled surface of the shoulder L until the letters or numbers desired in the new combination are opposite the points *l* of the openings L' of the semi-cylindrical plates B, as will be readily understood. When the button T is released, the sliding bar or bolt P, by reason of the spring A', resumes its advanced or normal position. When the door is closed, the projecting portion U of the bar P, engaging the beveled portion Y of the locking-plate V, forces said plate upward until the portion U of the bar P enters the notch, when the pressure of the spring on the pin *x* causes the plate to descend to its normal position and the door is locked. If the combination be forgotten, the proprietor of the box to be opened attracts the attention of the clerk inside the office, who by exerting a slight pressure against the under side of the bent portion Z of the plate V forces said plate upward until the notch *v* is disengaged from the portion U of the bar P and the door may be opened, as will be readily understood.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. In a combination-lock, a door carrying the semi-cylindrical protecting-plates B, cylindrical casings E, carrying the sleeve or thimble provided with the combination figures or letters revolubly secured on the shaft D of boxes C, secured to rear side of the door, substantially as described.

2. In a combination-lock, the combination, with the revoluble cylinders E on shaft D, the detachable and revoluble thimbles K, carrying the combination numbers or letters, of sliding bar P, provided with slot *p*, engaging pin Q, pin R, operating in slot S of the door, projecting portion U, and aligned portions O, adapted to enter notches N of casing E when the door is unlocked, substantially as described.

3. The combination of the sliding bar or bolt P, provided with a bent portion U, with a plate V, vertically reciprocal on the guide-pins *w* and *w'* of the plate W, substantially as described.

4. In a combination-lock, a locking-plate provided with the vertically-aligned notches *v* and *v'*, operating on guide-pins *w* and *w'* of plate W, the spring X, secured to the pins *w'* and *x*, the beveled edge Y, and outstanding portion Z, substantially as described.

5. In a combination-lock, the combination of a cylindrical casing E, having a closed end or head F, provided with a milled shoulder *g*, the said casing having a notch N and serrations on its open end, a thimble K, movably mounted on the casing and having visual signals thereon, and having an annular flange L with a milled periphery thereon, and a spring holding the casing against movement, as described.

6. In a combination-lock, the combination, with the cylindrical casings E, having one of their ends serrated and provided with a notch N, of a thimble movably mounted upon each of the said casings and having visual signals thereon, and a locking-plate having projections thereon adapted to enter the said notches, as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS D. MORRIS.

Witnesses:

G. H. TERWILLIGER,
R. P. ANDERSON.