

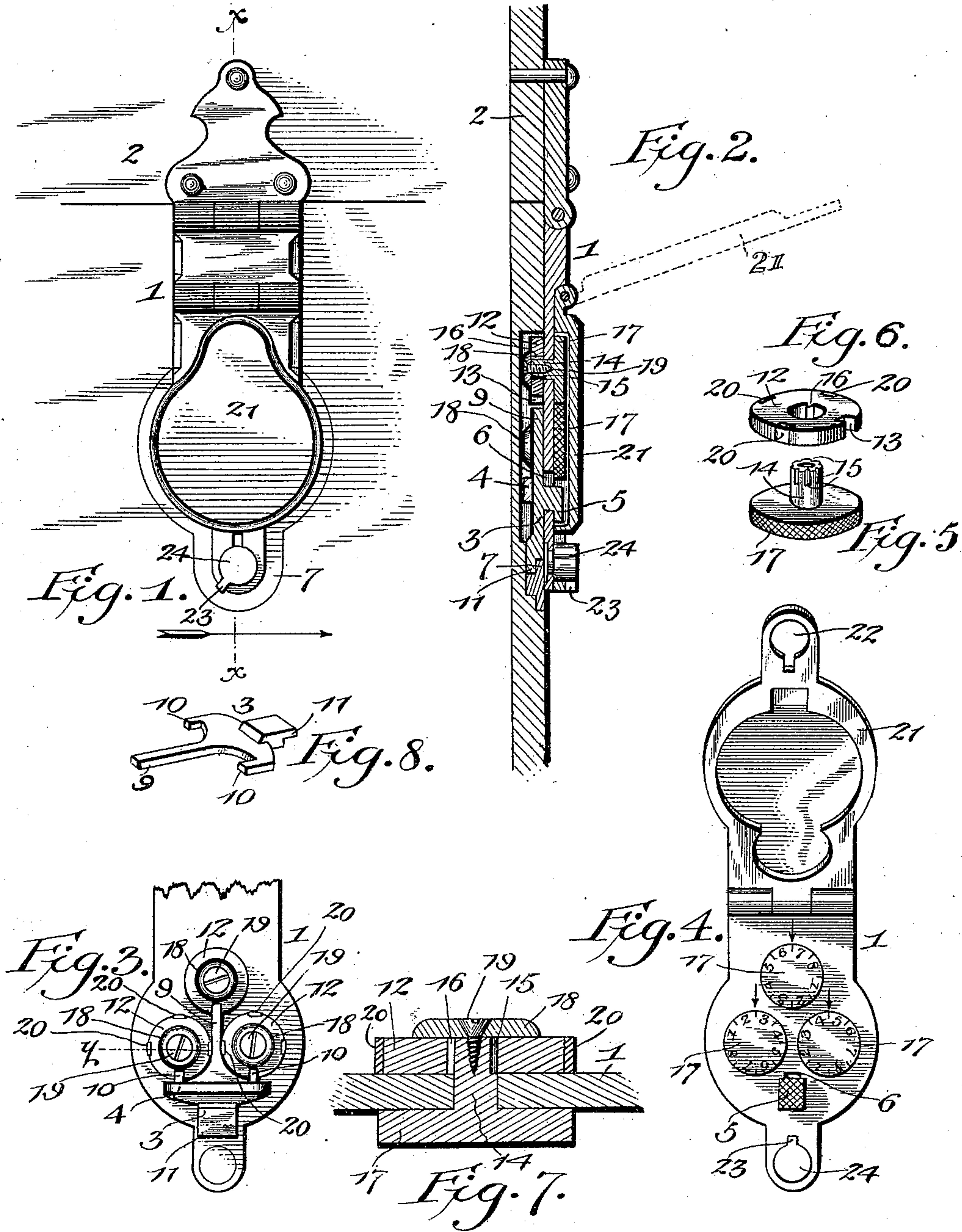
No. 641,458.

Patented Jan. 16, 1900.

C. D. LOGAN.
TRUNK LOCK.

(Application filed Feb. 8, 1899.)

(No Model.)



Witnesses

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TRUNK-LOCK.

SPECIFICATION forming part of Letters Patent No. 641,458, dated January 16, 1900.

Application filed February 8, 1899. Serial No. 704,922. (No model.)

To all whom it may concern:

Be it known that I, CRAWFORD D. LOGAN, a citizen of the United States, residing at Coal Hill, in the county of Johnson and State of Arkansas, have invented a new and useful Trunk-Lock, of which the following is a specification.

This invention relates to locks of the keyless type and commonly designated as "permutation" or "combination" locks, and is designed chiefly as an improvement on the class of locks specially constructed for fastening trunks, chests, box-covers, and analogous packages having a folding cover or requiring to be fastened by a lock of the hasp variety.

The invention consists of the hasp having the locking mechanism attached thereto, the operating-knobs being protected and concealed from view by a hinged cap-plate, which is positively fastened at its free end when folded upon the hasp and over the said operating-knob.

The invention further consists of the novel features and the peculiar construction and combinations of the parts, which hereinafter will be more fully set forth, and noted in the appended claims.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a front view of a lock constructed in accordance with this invention, showing it in operative relation. Fig. 2 is a section thereof on the line xx of Fig. 1, the dotted lines showing the cap-plate moved outward at its free end when it is required to gain access to the operating-knobs or finger-grip of the locking-bolt. Fig. 3 is a detail view of the inner or rear side of the hasp, showing the relation of the parts when the terminal portions of the lock-bolt extensions or arms are entered into the peripheral notches of the tumblers. Fig. 4 is a face view of the hasp,

the cap-plate being thrown upward, so as to expose the lock-operating mechanism. Fig. 5 is a detail perspective view of an operating-knob and its spindle. Fig. 6 is a detail view of one of the tumblers. Fig. 7 is a detail section of the hasp on the line $Y Y$ of Fig. 3, showing the relation of the parts for securing the tumbler upon its spindle in a relatively-adjusted position. Fig. 8 is a detail perspective view of the locking-bolt.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The hasp 1 is hinged to the cover 2 of the trunk, box, or like article in any of the usual ways and is provided with the locking mechanism, which is applied directly thereto. The locking-bolt 3 is slidably mounted upon the rear side of the hasp and operates through a keeper 4 and is provided with a finger-grip 5, which extends through a slot 6 of the hasp, to the front side thereof, said slot 6 being of a length so as to admit of the locking-bolt having a limited movement sufficient to clear the keeper 7 or like part applied to the body of the trunk or box 8. This locking-bolt is formed with a series of arms 9 and 10, three being shown, the middle arm 9 being of greater length than the side arms 10, so as to pass between transversely-aligning tumblers placed upon opposite sides thereof and cooperate with a third tumbler located opposite the space formed between the said pair of tumblers. The arms or extensions 9 and 10 may be formed with or applied to the locking-bolt, but preferably constitute an integral part thereof, whereby the construction is rendered less costly and more durable. The engaging end of the locking-bolt is notched adjacent to the hasp, so as to form a projecting lip 11 to pass in the rear of the keeper 7 and engage therewith and prevent outward movement of the hasp at its free end when the locking-tumblers are turned so as to engage with the extremities of the arms 9 and 10.

The tumblers and the parts cooperating therewith are of like construction. Hence it is deemed necessary only to give a detailed description of one. Each tumbler is in the form of a disk 12 and is provided with a notch

13, extending inwardly from its periphery. The knob-spindle 14, having the disk tumbler 12 applied thereto, is rotatably mounted in an opening of the hasp, and its inner end is formed with a series of corrugations 15 to receive a cog 16, extending inwardly from the central opening of the tumbler, so as to fix the position of the latter upon the knob-spindle when adjusted to the required position. The corrugations 15 are of a length corresponding to the thickness of the disk tumbler and act jointly with the cog 16 to limit the inward movement of the tumbler when placing it upon the knob-spindle, thereby preventing the clamping of the hasp between the knob 17 at the outer end of the spindle and the disk tumbler applied to the inner end of said spindle. It will thus be seen that the corrugations 15 and cog 16 perform a twofold office—viz., to prevent the turning of the disk tumbler upon the spindle and to limit the inward movement of said tumbler, so as to prevent its binding upon the hasp after the parts have been assembled. The tumbler is held in place upon the knob-spindle by means of a washer 18 and a fastening-screw 19, the latter entering a threaded opening formed in the knob-spindle and having its head countersunk in the outer face of the washer 18. A tumbler will be provided for each arm or extension of the locking-bolt and will be disposed so as to engage with the terminal thereof. The number and disposition of the arms or projections 9 and 10 of the locking-bolt are immaterial so long as each arm or extension co-operates with a tumbler forming an element of the locking mechanism and requiring an independent operation to bring the notch of the tumbler in position to receive the terminal portion of the arm when it is required to open the lock to gain access to the trunk or box secured thereby.

In the construction illustrated most clearly in Fig. 3 a pair of tumblers is placed upon opposite sides of the middle arm 9 and are spaced apart, so as to admit of said arms operating freely between their contiguous portions, thereby supplementing the action of the keeper 7 in directing the locking-bolt in its reciprocating movements. The tumblers, arranged upon each side of the middle arm 9, are provided at intervals in their peripheral length with blocks or patches 20 of rubber, leather, or like material, which are adapted to engage frictionally with the sides of the arm and secure it against movement occasioned by jar or jolt. These blocks or patches of rubber are not essential or necessary and can be omitted. The operating-knobs 17, applied to the outer ends of the knob-spindles, are provided with marginal characters to co-operate with indicating-marks upon the face of the hasp to determine the correct position of the tumblers when it is required to release the locking-bolt to admit of the opening of the lock and the releasing of the cover or parts fastened thereby.

The cap-plate 21 is hinged at one end to the hasp, and its inner side is recessed to receive the operating-knobs and finger-grip and is provided at its free end with an extension apertured to receive a fastening device provided at the free end of the hasp for securing the cap-plate when closed. The opening 22 in the extension of the cap-plate has a notch extending therefrom and designed to admit of the passage therethrough of the nib 23, projecting laterally from a side of the stud 24, rotatably mounted upon an end extension of the hasp. This cap-plate conceals the lock-actuating mechanism and forms a protection therefor.

By having the locking mechanism applied directly to the hasp the lock can be readily applied to any trunk, box, or package by the average person, and the construction is far more simple than locks of this type having the locking mechanism applied to the body of the trunk or box and independent of the hasp. Moreover, access can be readily had to the operating mechanism for cleaning and oiling and for changing the combination when required.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a hasp, of a locking-bolt arranged upon the rear side of the hasp and having a finger-grip projecting through and operating in a slot formed in the hasp, tumblers located upon the rear side of the hasp, and operating-knobs arranged upon the front side of the hasp and connected with the tumblers, substantially as and for the purpose set forth.

2. The combination with a hasp having locking mechanism located upon its rear side and actuating mechanism upon its front side, of a cap-plate hingedly connected with the hasp and adapted to protect and conceal the actuating mechanism, and a locking device for securing the cap-plate when closed, substantially as set forth.

3. In a combination-lock, a knob-spindle provided at its inner or remote end with a series of corrugations, a tumbler fitted upon the inner end of the knob-spindle and having an inwardly-extending cog to act jointly with any one of the series of corrugations to hold the tumbler in an adjusted position and limit its inward movement upon the spindle, means for securing the tumbler upon the knob-spindle, and a knob upon the spindle and having a character thereon corresponding to each of said corrugations, substantially as described.

4. In a permutation-lock, the combination of a knob-spindle having a series of corrugations at its inner end, a tumbler adjustably mounted upon the knob-spindle and provided with an inwardly-extending cog to engage with any one of the series of corrugations thereof to limit the inward movement of the tumbler and fix its position with reference to the knob-spindle, a fastening-screw and washer as means for securing the tum-

bler to the knob-spindle, and a knob upon the spindle having characters thereon corresponding in number and location to the said corrugations, substantially as described.

5 5. The combination with a hasp, of a locking-bolt carried by the hasp and having a finger-grip projecting through and operating in a slot in the hasp, tumblers carried by the hasp, operating-knobs upon the front side of
10 the hasp and connected with a tumbler, a cap-plate hingedly connected with the hasp

and arranged to cover the actuating mechanism, and means for latching the cap-plate in a closed position, substantially as described.

In testimony that I claim the foregoing as 15
my own I have hereto affixed my signature in the presence of two witnesses.

CRAWFORD D. LOGAN.

Witnesses:

J. D. HUNT,
H. E. INSKEEP.