N. Stafford,

Trunk Lock.

No. 46,721. Patented Mar. 7, 1865.

Fig. 1.

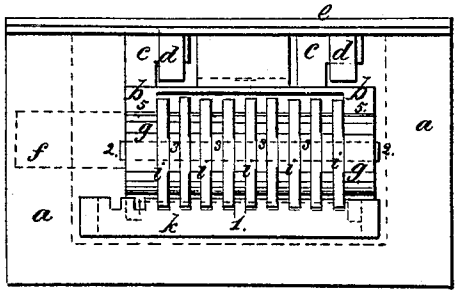


Fig. 2.

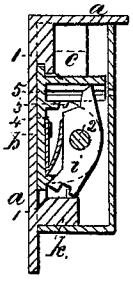


Fig. 4.

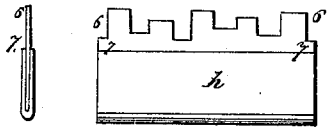
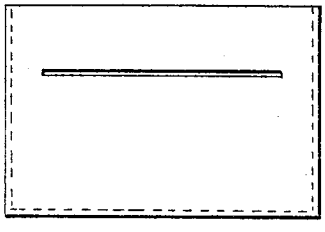


Fig. 3.



Witnesses:

Thos. Lee Harvey

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A.M. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

NELSON STAFFORD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 46,721, dated March 7, 1865.

To all whom it may concern:

Be it known that I, NELSON STAFFORD, of Brooklyn, in the county of Kings and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Locks; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a view of a lock fitted with my improvement, the cap-plate being removed. Fig. 2 is a cross-section of the same. Fig. 3 represents the cap-plate, and Fig. 4 represents the key.

Similar marks of reference denote the same parts.

Locks have heretofore been made with tumblers or auxiliary tumblers moving with the bolt. In such cases, however, said tumblers have generally moved in a plane parallel, or nearly so, to that in which the bolt moves.

The nature of my said invention consists in a series of tumblers swinging in a plane at right angles, or nearly so, to the bolt, and moving with the bolt and key, combined with stationary stops, that, taking said tumblers, hold the bolt when the same is locked or unlocked.

In the drawings, *a* is the lock-plate, upon which are fixed stops or supports 1 1, in which the bolt is guided as it slides back and forth. *b* is the plate or bolt-stock carrying the bolts *c c*. These are represented as made of an L shape, adapted to passing through the staples or eyes *d d* on the plate *e*, to form a lock adapted to a box or trunk; but it will be evident that the bolt itself might extend out from the plate *b* in the direction shown by dotted lines at *f*, to adapt the said lock to drawers, doors, &c.; or said bolt might be formed in any desired manner adapted to the circumstances under which the lock is to be used.

The bolt-stock *b* is provided with flanges or lugs *g g*, carrying the center-pin 2 of the tumblers *i i*, and these tumblers are kept apart by stationary plates 3 3, or divisions, which should extend back and be attached to the bolt-stock *b*, in order that the tumblers *i* may be more securely held in their proper places. Springs are provided, one to ecah tumbler, as represented at 4, Fig. 2. Each tumbler becomes a lever, swinging on the pin 2, and the springs 4 keep the ends of the tumblers that are acted on by the key toward said key.

At 5 5 grooves are provided in *b*, into which the edges 6 6 of the plate shaped key *h*, Fig. 4, are entered, and the shoulders at 7 7 on said plate-key determine the point to which the key is to be pressed in. The portion of this plate-key that comes in contact with the ends of the tumblers *i i* is notched out of the proper shape to give to each tumbler the required motion or position. The opposite ends of the tumblers to those acted on by the key occupy notches in the stationary ward bar or plate *k*, and the ends of the tumblers are themselves notched. (See Fig. 2.) It will now be apparent that the proper key is of a shape to bring all the notches in the ends of the tumbler on line with the ward-bar *k*, and that in this position the bolt and tumblers can be slid back and forth by the key, all these parts moving together, and the notches at the ends of the tumblers sliding over the stationary notched ward-bar; but if an improper key is introduced, and any one tumbler doos not occupy the proper position, the bolt and tumblers cannot be moved, in consequence of one or more tumb'ers touching at their ends against the projections of the notched ward-bar.

There will require to be a larger number of notches in the ward-bar than there are tumblers, if all such tumblers become operative, to hold the bolt in an unlocked as well as locked position.

It will be apparent that two ranges of tumblers might be provided, if desired, the moving ends passing between each other, so as to be operated by one key. In this case the ward-bars will be on the opposite sides of the bolt, said bolt with its two ranges of tumblers being between said ward-bars, and the ends of the tumblers coming intermediately and lapping sufficiently past each other to be operated on by one plate-key.

What I claim, and desire to secure by Letters Patent, is—

1. A series of tumblers swinging in a plane at right angles, or nearly so, to the line of motion of the bolt, and moving with said bolt, in combination with stationary wards, substantially as specified.

2. The combination of a plate-key with a sliding bolt and tumblers, when said bolt is moved by an endwise motion given to said key, as specified.

3. The bolt carrying the tumblers, and fitted as specified, in combination with the key and stationary ward-bar, as set forth.

In witness whereof I have hereunto set my signature this 17th day of December, 1864.

N. STAFFORD.

Witnesses:

THOS. GEO. HAROLD,

CHAS. H. SMITH.