W. H. TAYLOR.
KEYS FOR LOCKS.

No. 193,569. Patented July 24, 1877.

Fig 1

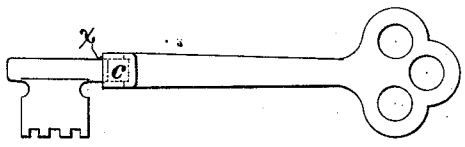


Fig 2.

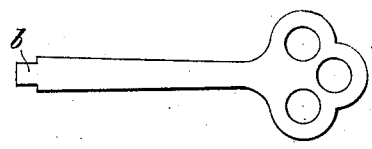


Fig 3

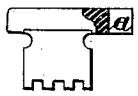


Fig 3ª

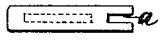


Fig 4



Fig 4ª



Fig 5

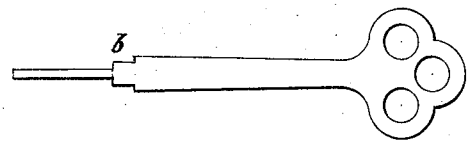


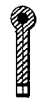
Fig 6



Fig 8



Fig 7



WITNESSES

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Geo. W. Brock

INVENTOR

Warren H Taylor

By his Attorneys.

Baldwin Hopkins & Peyton.

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UNITED STATES PATENT OFFICE.

WARREN H. TAYLOR, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE LOCK MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN KEYS FOR LOCKS.

Specification forming part of Letters Patent No. **193,569**, dated July 24, 1877; application filed June 5, 1877.

To all whom it may concern:

Be it known that I, WARREN H. TAYLOR, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain Improvements in Keys, of which the following is a specification, that will enable persons skilled in the art to make and use the same, reference being had to the accompanying drawings.

My improvements relate to keys in which a flat steel or sheet-metal shank and bow are employed; and their object is to secure the strength, lightness, convenience in use, and economy in manufacture of such a shank and bow united securely with a round stem, or that part of an ordinary round key which gives it support, and serves as its journal in the bearing of the lock-case.

Flat keys made wholly of sheet metal involve the use in the lock of a hub or "roll-back" to support them during their revolution, and it is often difficult to enter the flat key into this hub when the lock is on the door, because the hub is out of sight and the key must pass through a greater or less thickness of wood to reach the lock. The hub is also occasionally turned and its slot moved from its vertical position by accident, so that the key cannot enter until it is in place. Hence it has heretofore been attempted to combine the advantages of a round and flat key, as appears by the patent granted to Emory Parker, May 4, 1869, in which a flat sheet-metal bow, shank, and bit, made of one piece, are united with a peculiar slotted stem cut nearly in two, which leaves it weak. Owing to this plan of construction, soldering or brazing must largely be depended on for securing the two parts together, which injures the appearance of the key, renders it difficult to finish, and more liable to be defaced by corrosion.

My purpose is to obviate these objections by an improved construction that will enable the parts to be more securely fitted and united, with less dependence upon soldering or brazing, and with a greater facility for finishing.

The subject-matter claimed will hereinafter specifically be designated.

In the drawings, Figure 1 is a view of my improved key complete. Fig. 2 is a view of the sheet-metal shank and bow detached. Figs. 3 and 3ª are views of the cylindrical stem and bit; and Figs. 4 and 4ª are views of a slotted ferrule, which is employed to unite the shank and stem. Fig. 5 is a view of a modification of the form of the shank. Figs. 6, 7, and 8 are views, in cross-section, of stems and bits of different modes of manufacture, but alike in outline.

I prefer to make the bit and stem of a single piece of metal. This may be done by cutting suitable blanks from rolled or drawn stock of the form shown in cross-section by Fig. 6, or by stamping out sheet-metal blanks and doubling or folding them, as shown in cross-section by Figs. 7 and 8, and punching or trimming these blanks to give the bit the desired shape, and leave it shorter than the stem.

It will be seen that the combined stem and bit shown by Fig. 6 is solid, that the one shown by Fig. 7 is formed of a single piece of sheet metal folded in the middle, and that the one shown by Fig. 8 is formed of a single piece of sheet metal folded at one side. In one end of the stem, in order to connect it with the sheet-metal shank, I form a slot, *a*. I stamp out the shank and bow from sheet metal of a thickness at least equal to the width of the slot in the stem, and, at the same time, form on its end a tenon, *b*, of a width equal to the diameter of the stem, to fit in the slot. I place a ferrule, *c*, open at one end and partially closed and slotted at the other, on the stem so that the slot in the ferrule and that in the stem shall coincide, thus forming a complete mortise, into which the tenon is inserted and secured, its shoulders resting against the bottom of the slot in the ferrule. If desired, there may be an aperture running partially or entirely through the stem, to receive the projection of the tenon illustrated in the modification of the shank shown in Fig. 5. The ferrule not only securely unites the shank and stem, but also forms a shoulder, *x*, that serves as a stop or gage to the key when inserted in the lock. The object of having it partially closed at the slotted end is to give a better finish, and to prevent its slipping out

of place, the end of the stem holding it on one side, while the shoulders of the tenon on the shank entering its slot hold it on the other; but although I prefer to have it partially closed at the slotted end, it is not absolutely essential to the construction of my improved key that it should be, because various other means besides partially closing its slotted end might be adopted for holding it in place on the stem, and preventing it from slipping toward the bit.

I am aware that a sheet-metal shank and bow are not new; and I do not broadly claim herein a key-shank and bow without bit or stem, formed in one piece of sheet metal, and provided with a tenon for rigidly uniting it with the stem of other metal; nor the combination of a sheet-metal key-shank and bow with a cylindrical slotted key-stem carrying a bit or wing; nor the combination of a sheet-metal shank and bow and a cylindrical stem, made in separate parts and rigidly secured together, as these features are shown and claimed in a pending application heretofore filed by me, of which this is a division.

What I do claim herein as my invention, and desire to secure by Letters Patent, is—

1. A key-shank and bow formed of one piece of sheet metal, and provided with a tenon and projection thereof smaller than the tenon, substantially as described.

2. An improved key, composed of a sheet-metal bow and shank, and a slotted bit-stem, the two united by a ferrule that serves as a stop or gage for the key.

In testimony whereof I have hereunto subscribed my name.

WARREN H. TAYLOR.

Witnesses:
CHAS. E. VAIL,
L. H. LEE.