

Early Pin Tumbler Slider Mechanism - Rotating Plug

By Dayu Chen ... 2019

An unremarkable lock turned out to be a monumental discovery. This Yale Jr lock has its original sliding key and the slider mechanism with a rotating plug, and thus is a product of the often overlooked, and relatively unknown US Patent 31278, granted to Linus Yale Jr in 1861.

Here is the timeline of the several key patents for the development of the modern pin tumbler mechanism, to put this lock into perspective:

- Patent 3630: granted to Yale Sr on June 13, 1844. This is the first attempt at the pin tumbler mechanism and features a safe lock known as the Quadruplex lock. Four pins are arranged at 90 degrees internal around a round keyhole.
- Patent 18169: granted to Yale Sr on Sep. 8, 1857. This is the iconic "Yale slide" padlock where five pins are arranged in a straight line and the key has a sliding action. The key has a round shape, with a single groove milled as biting, sometimes known as the quill key.
- Patent 31278: granted to Yale Jr on Jan. 29, 1861. This was Yale Jr's first attempt at the rotating plug pin tumbler mechanism. He kept the design of his father's quill key, with the addition of a shoulder stop to the key shaft, to prevent the key from reaching too far down. However, significantly the key action is now rotating, not sliding. This is the patent for the lock described here.
- Patent 48475: granted to Yale Jr on June 27, 1865. This is the world-renowned Yale Mortise Cylinder Pin Tumbler Lock patent which the current pin tumbler mechanism is based on. In this patent, Yale Jr further refined the cylinder and rotating plug and invented a small, flat "feather key" to replace the round sliding/quill key. You can view the original patent model at the Lock Museum of America in Terryville, CT. Therefore, we can quite clearly see that this lock was the first improvement Yale Jr took upon his father's lock and is the earliest pin tumbler lock with rotating mechanism. It is the missing link between Yale Sr's slider padlock and Yale Jr's mortise cylinder pin tumbler lock and marks a crucial intermediary step in the development of modern pin tumbler mechanism. It is odd that actual locks of this 1861 patent were never found before, as most other Yale patents have at least a few examples known. The timing of the production of these locks (1861-1865) coincided with the Civil War which might have explained the low existence (and perhaps, production) rate of the lock.

Lastly, this NOS lock came from a collector who worked for Yale. He acquired a few locks when Yale was bought out by ASSA. This lock was among them. To my understanding, a few Yale slider padlocks were in the group too.