

RVAS3C 2014 Schuyler Towne

How to make a lock.

RVAS3C 2014 Schuyler Towne

Roman Locks



Huge Keys are Unwe

Huge Keys are Unweildy



60.9.60

Passage door key, from
Siebenbrunn (Austria)
8th century A.D. (Neolithic)
York & Towne

This Wh

Flat Keys are Easy to Imitate



Flat Keys are Easy to duplicate

Flat Keys are Easy to duplicate



Single Acting != Secure

Better Together



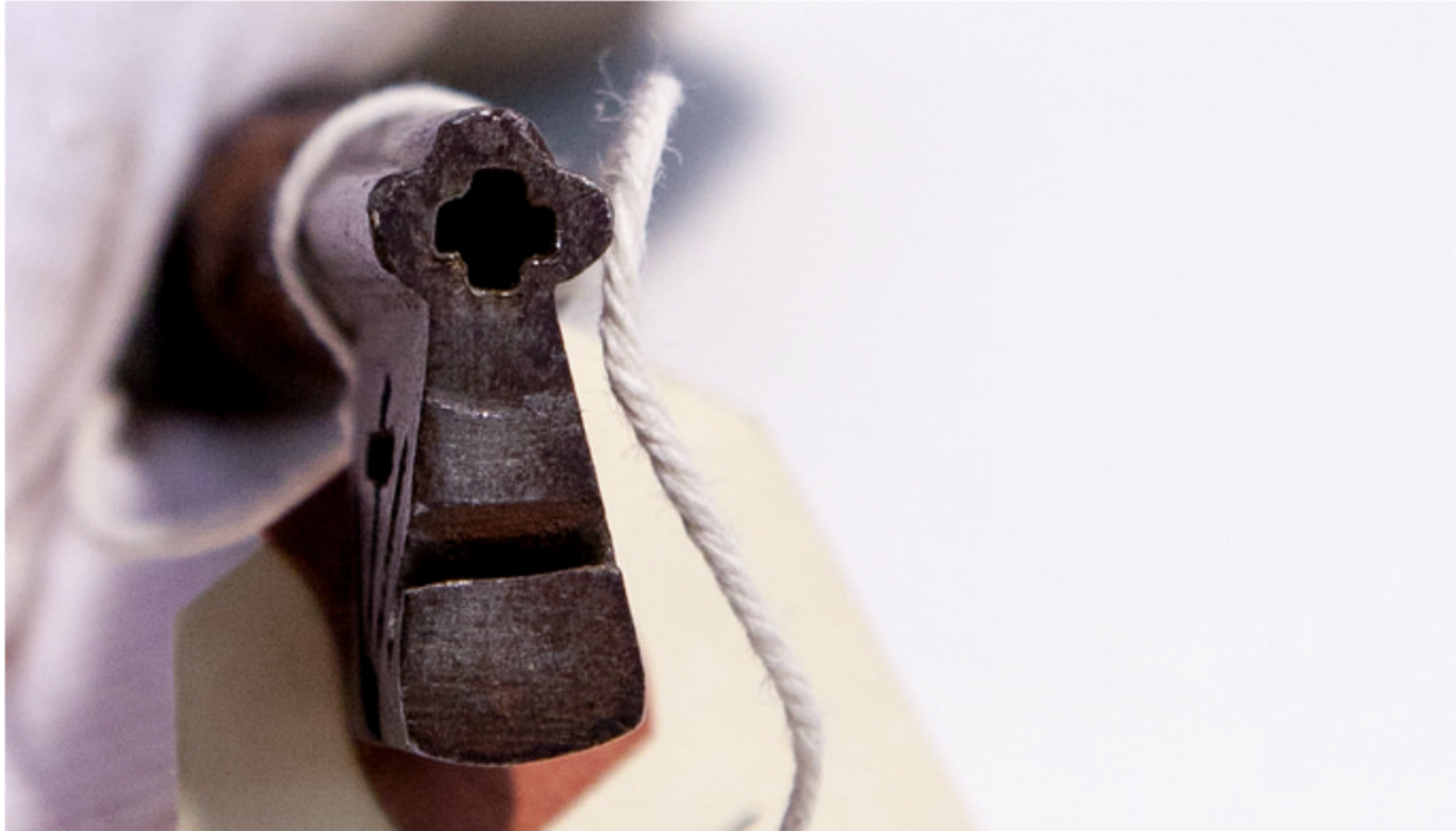
Paracentric Warding



Elaborate Warding Requires Precision



Let's Pattern These Too!



I Can Still Get a Wire In There...



This Whole Concept Is Doomed!



Single Acting != Secure



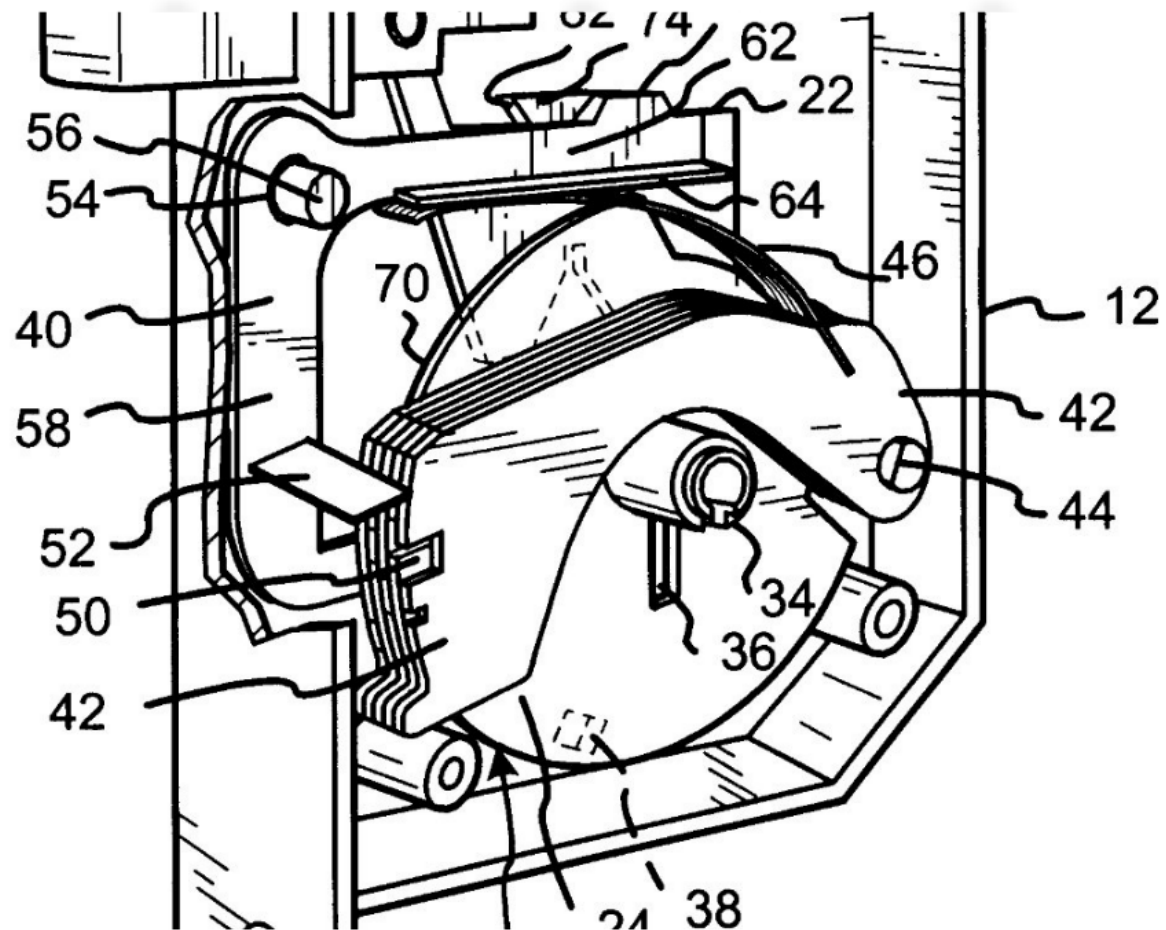
Enclosed Lever is Easily Impressed





Form Factor

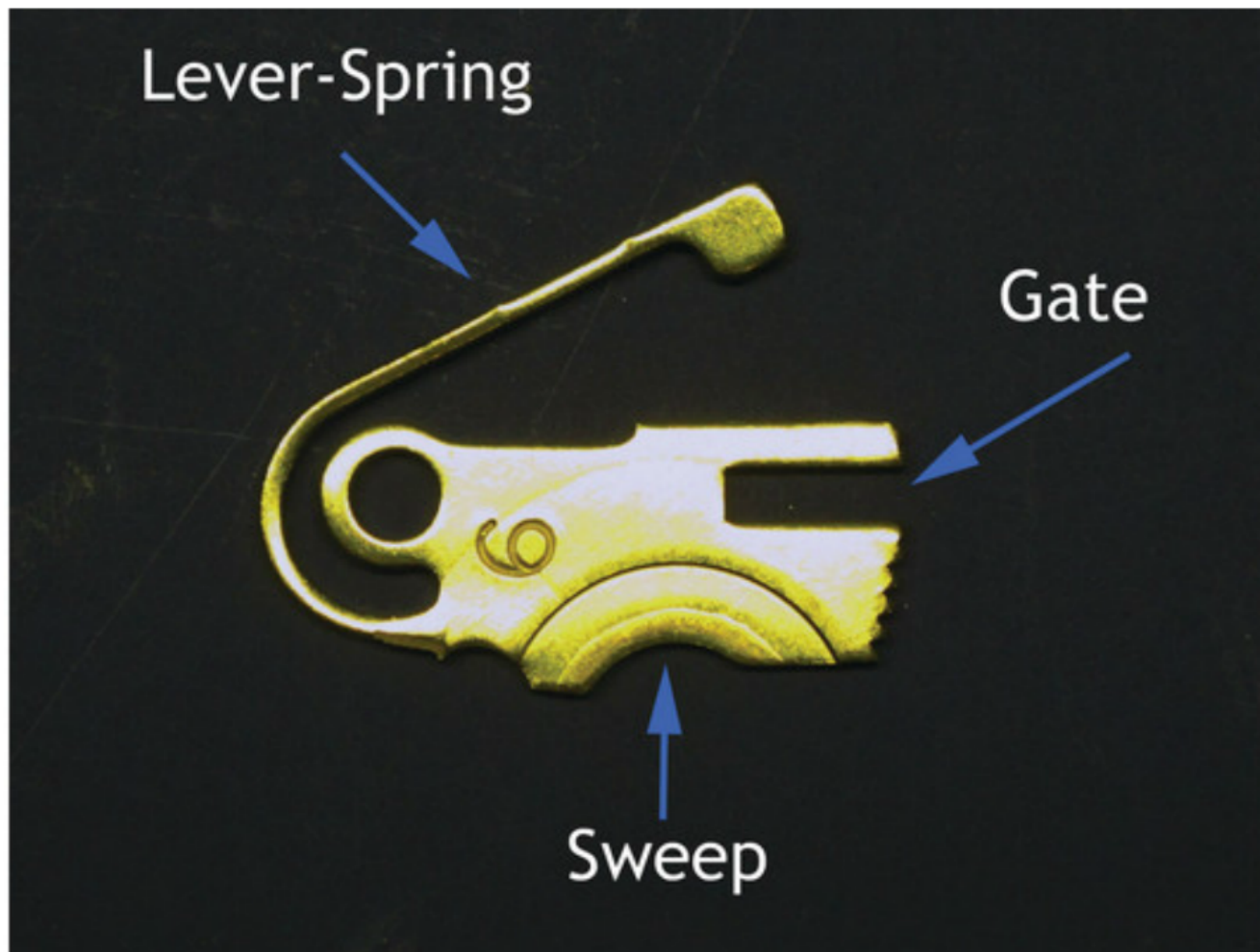
Edge Gates





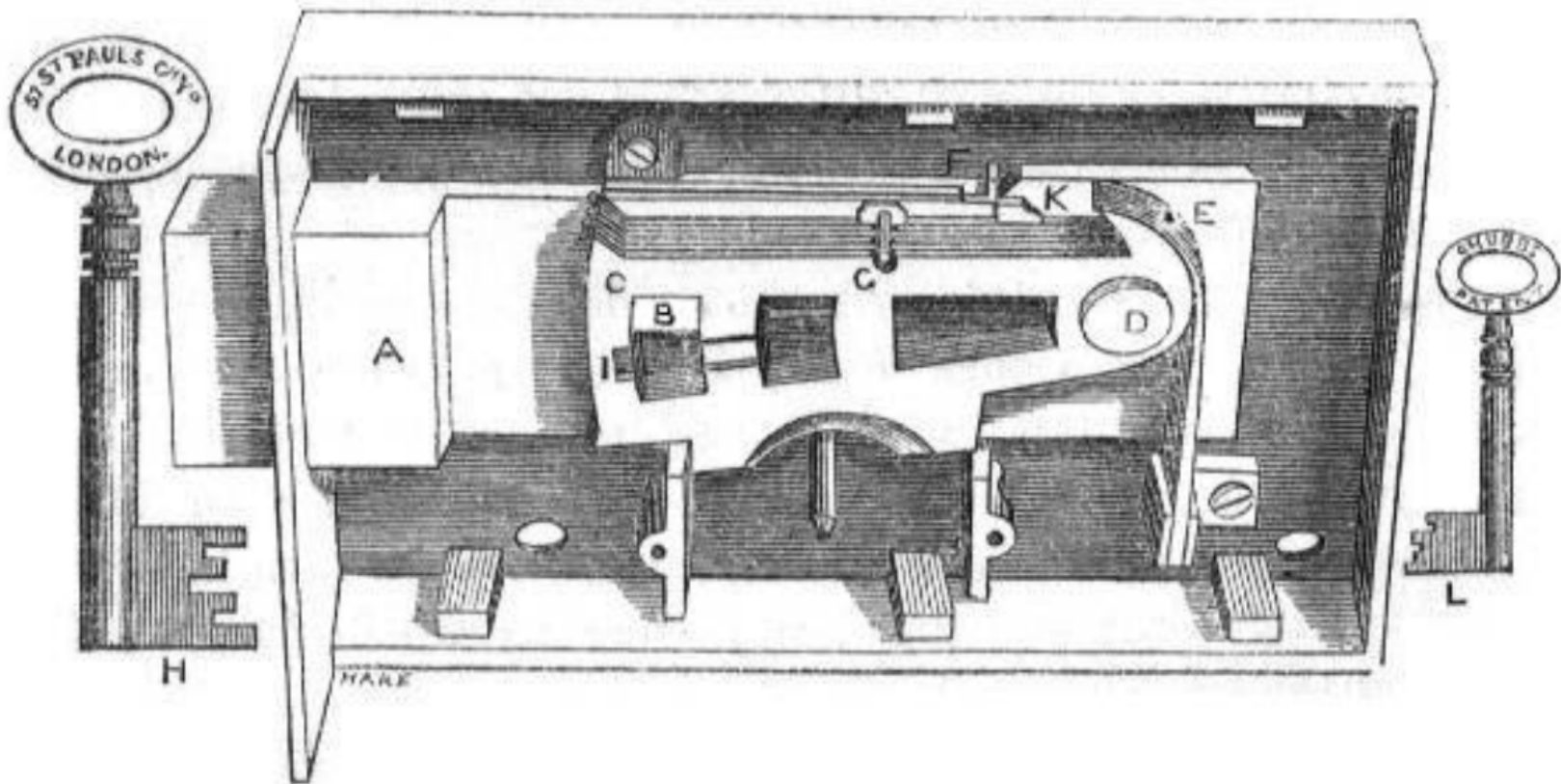
TENTATIVE METHOD!

Serrations

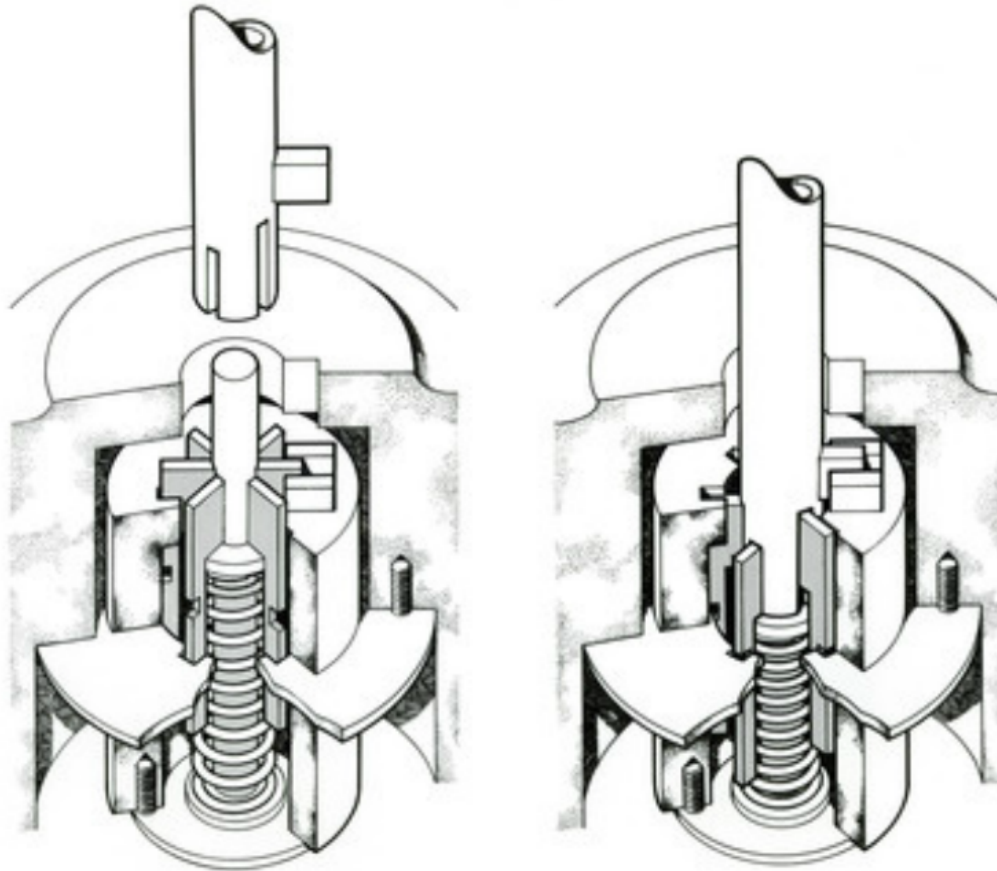


Detector

CHUBB'S LOCK



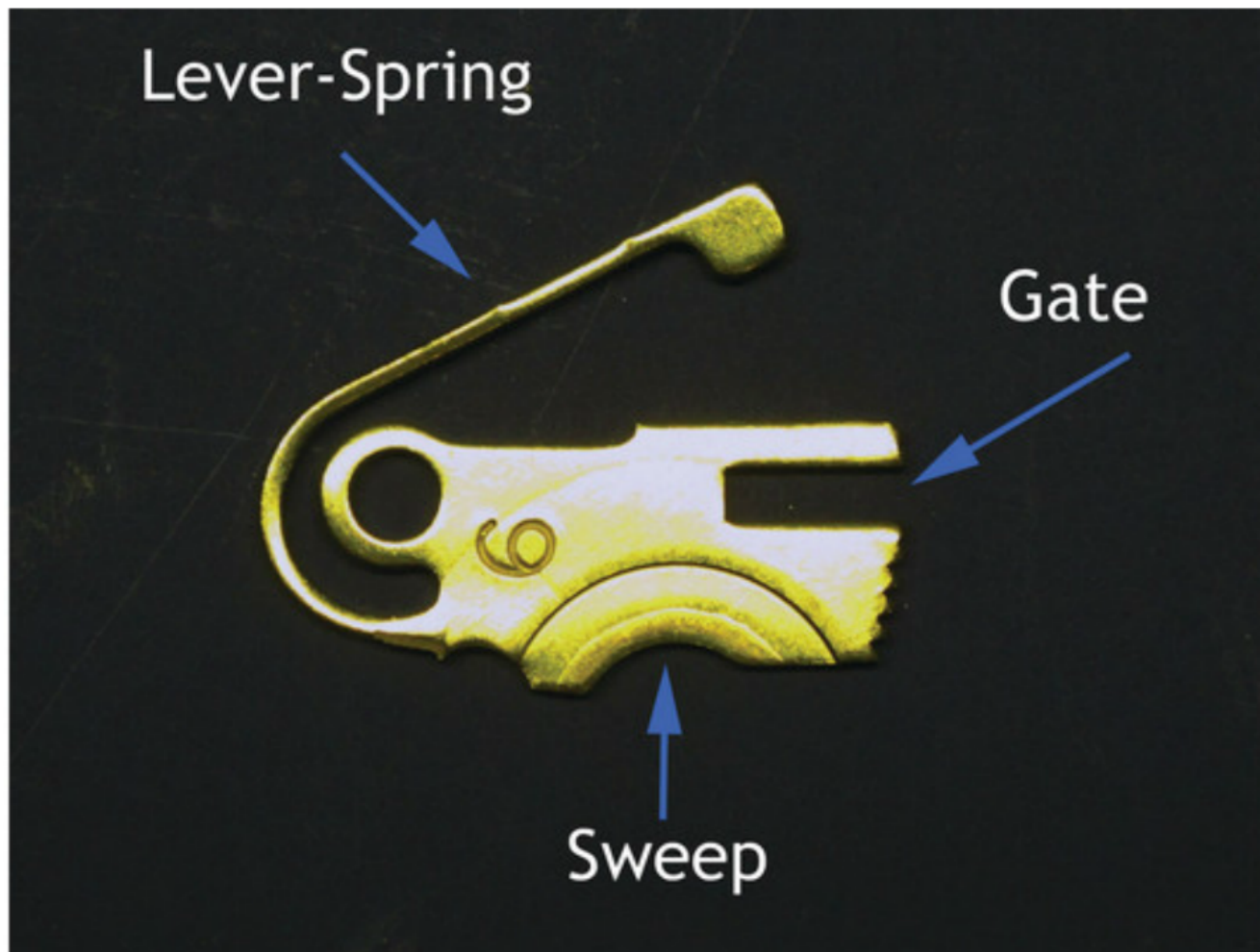
Joseph Bramah Appears





TENTATIVE METHOD!

Serrations





Form Factor

Compact Lever Lock





JUST ADD MORE!

Fichet 450



Mesopotamian Locks



Let's Add Some Pins to T

Let's Add Some Pins to That Bolt



Keys Are Easy To Duplicate

A photograph showing a set of keys with a yellow tag. The keys are dark and appear to be made of metal. The tag is yellow and has some faint, illegible text on it. The keys are lying on a light-colored surface. The image is framed by a thick orange border.

Let's Separate the Lock from the Bolt



a Lot of Space

Rediscovery by Europeans



"This idea might be improved on, but the Turks never think of improving."

William Eton
Survey of the Ottoman Empire, 1798



Form Factor



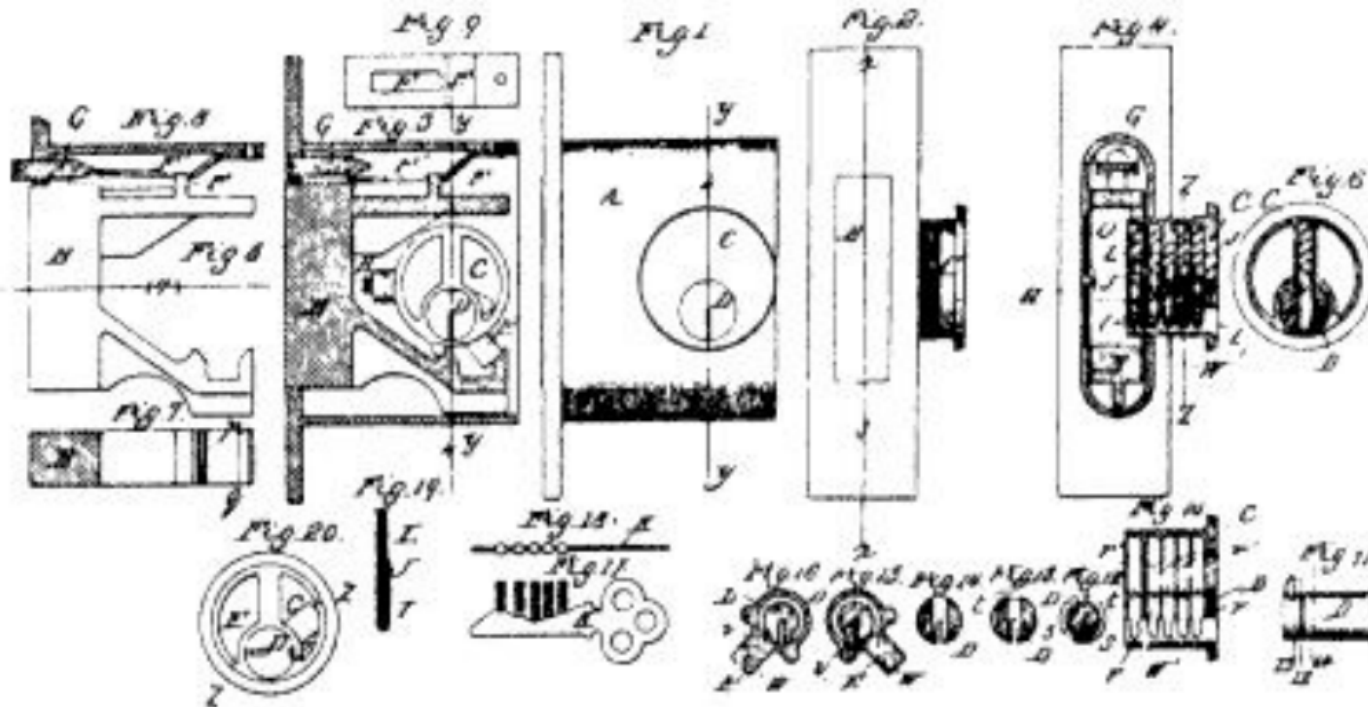
Sliding Takes Up a Lot of Space

Abraham Ogier Stansbury

Linus Yale Sr.

Linus Yale Jr.

Fitting Locks to Doors Sucks



Witnesses:

Harry Green
B. H. H. H.

INVENTOR

James V. H. H.

Open Keyway

Fig. 2.

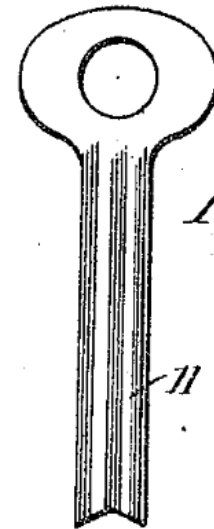
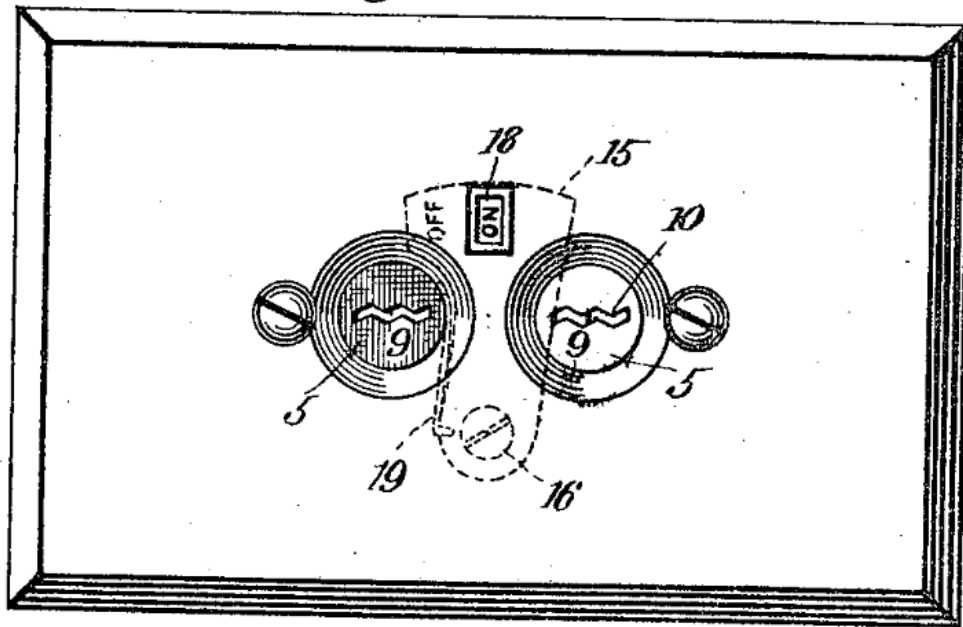


Fig. 5.



TENTATIVE METHOD!



Paracentric Warding





TENTATIVE METHOD!

Security Pins





TENTATIVE METHOD!

Trap Pins





TENTATIVE METHOD!

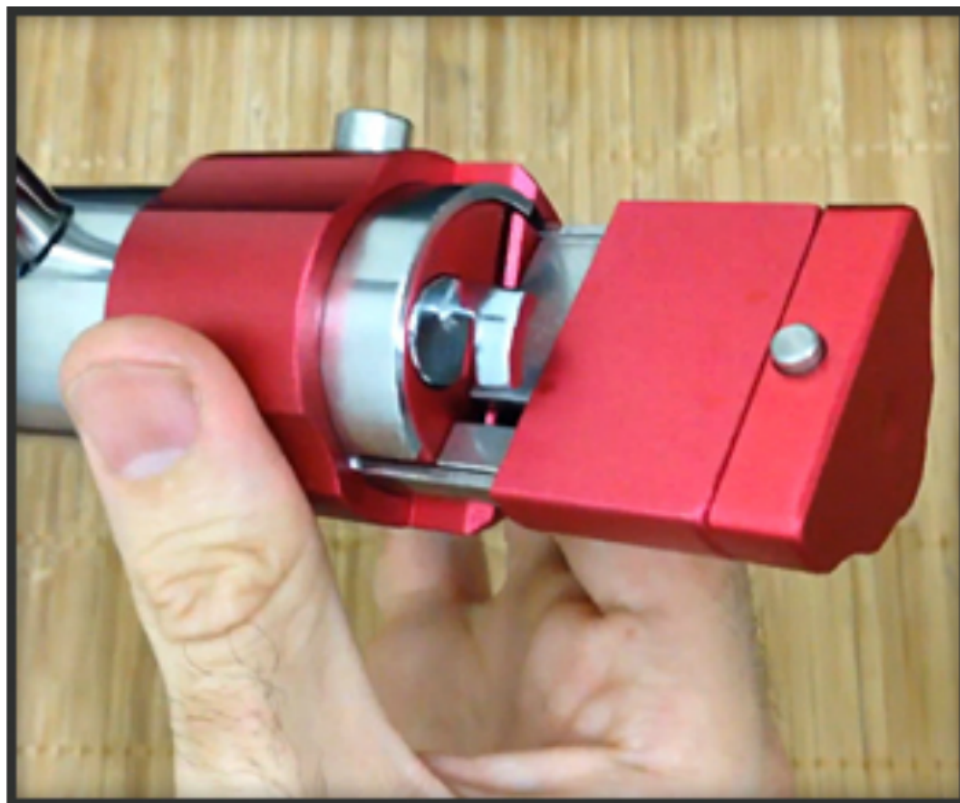
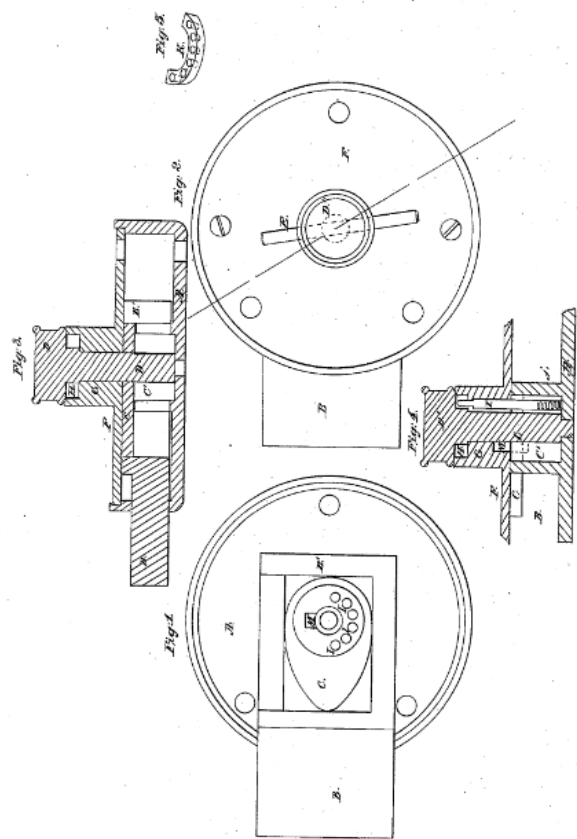


*L. Yale,
Lock.*

N^o 10,584.

Patented Feb. 28, 1854.

Lafayette Locks





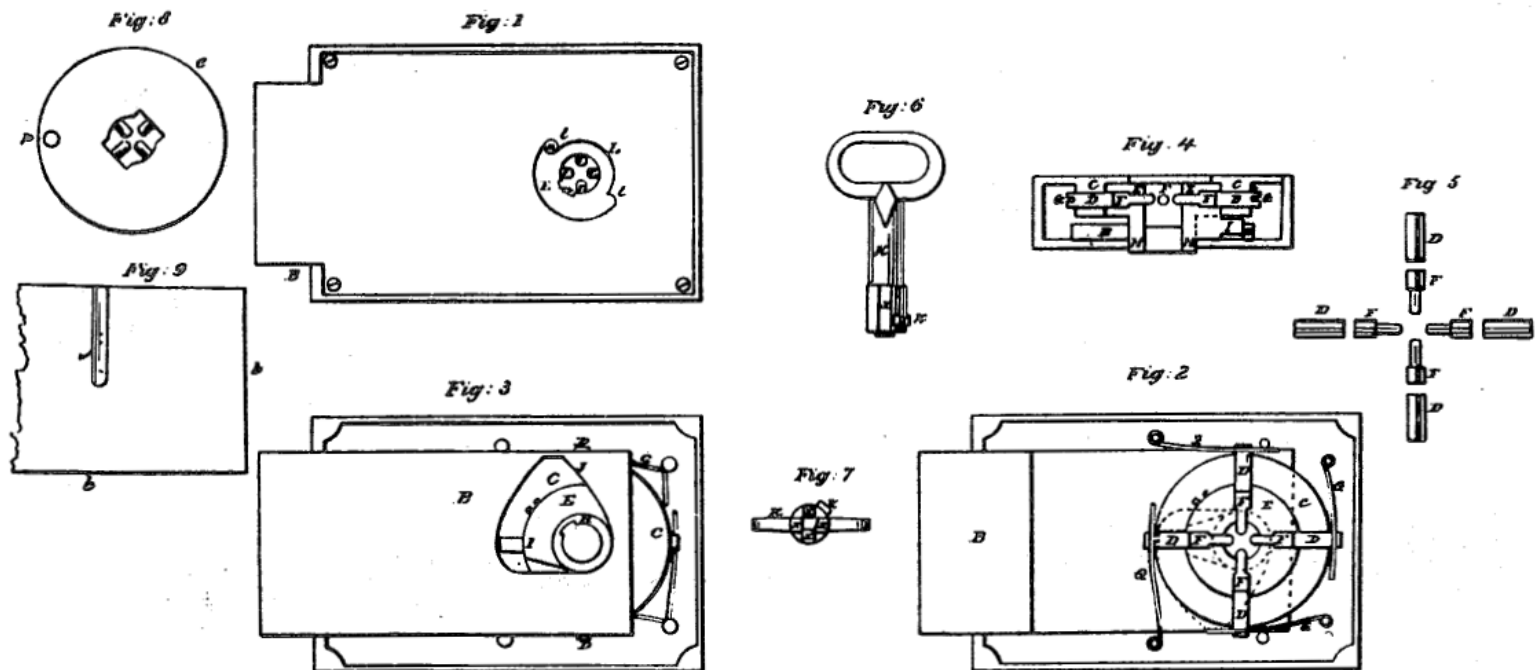
Secondary Locking Mechanisms

Add more pins?



What if the Pins Could

Even More Pins?



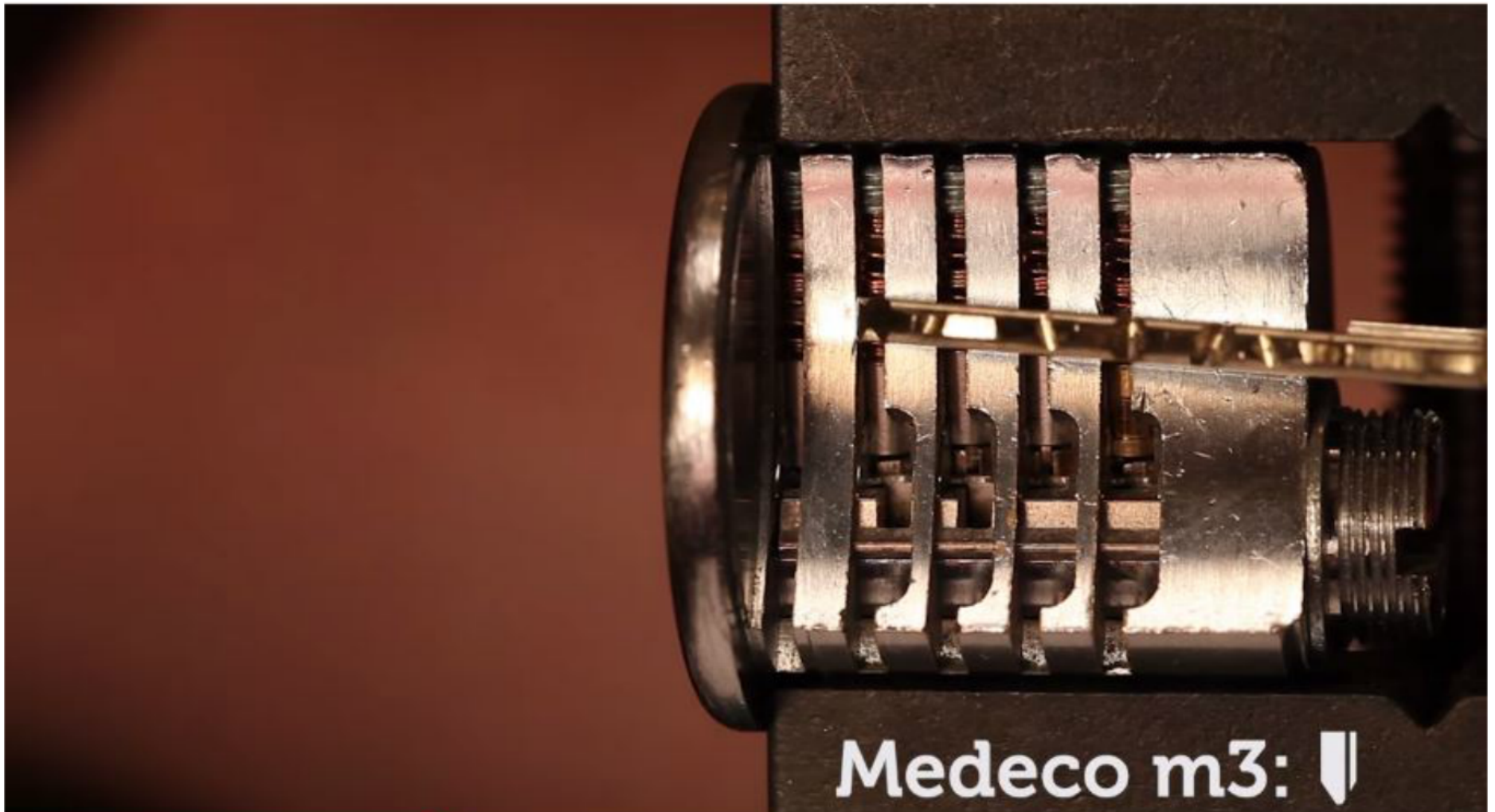
The Most Pins?



No Matter How Many Pins



What if the Pins Could Rotate?



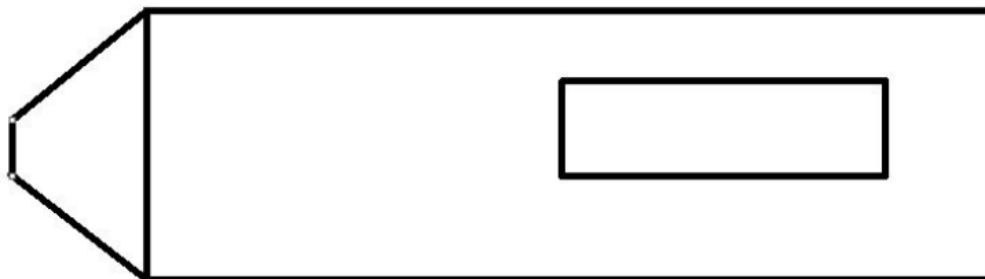
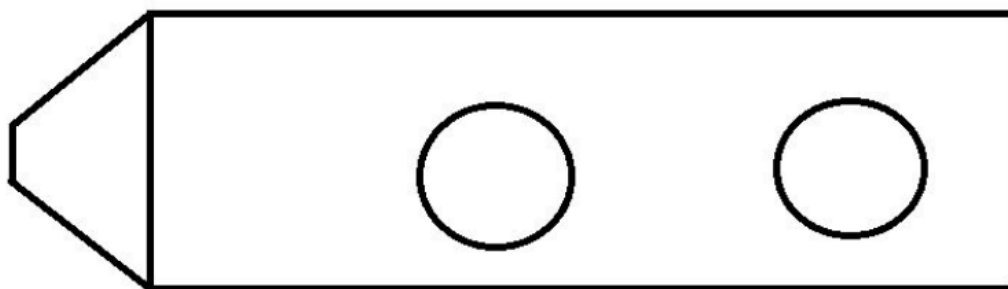
Emhart Interloc



Form Factor

This exploded view diagram illustrates the components of a Medeco lock cylinder assembly. The central component is the lock cylinder, which features the 'medeco' logo on its front face. To the left, a set of pins and springs is shown being inserted into the cylinder's internal mechanism. Below the cylinder, a key is shown with the 'medeco' logo on its head. To the right, the assembly continues with a series of components: a hexagonal nut, a washer, a circular plate, a small gear-like component, and a final hexagonal nut. Dashed lines indicate the alignment and assembly path for each part.

Masterkeying?

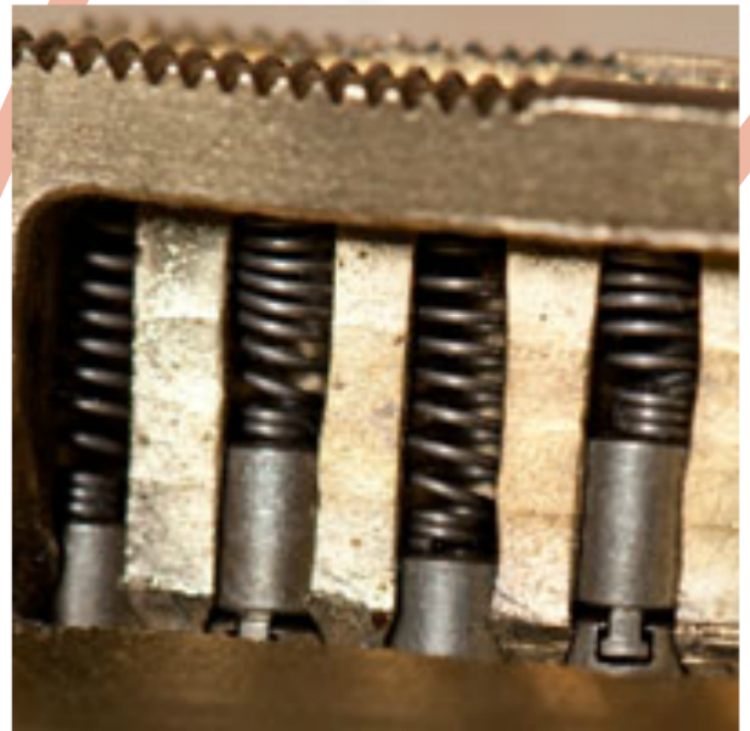




TENTATIVE METHOD!

Medeco m3: 

Emhart Interlocking

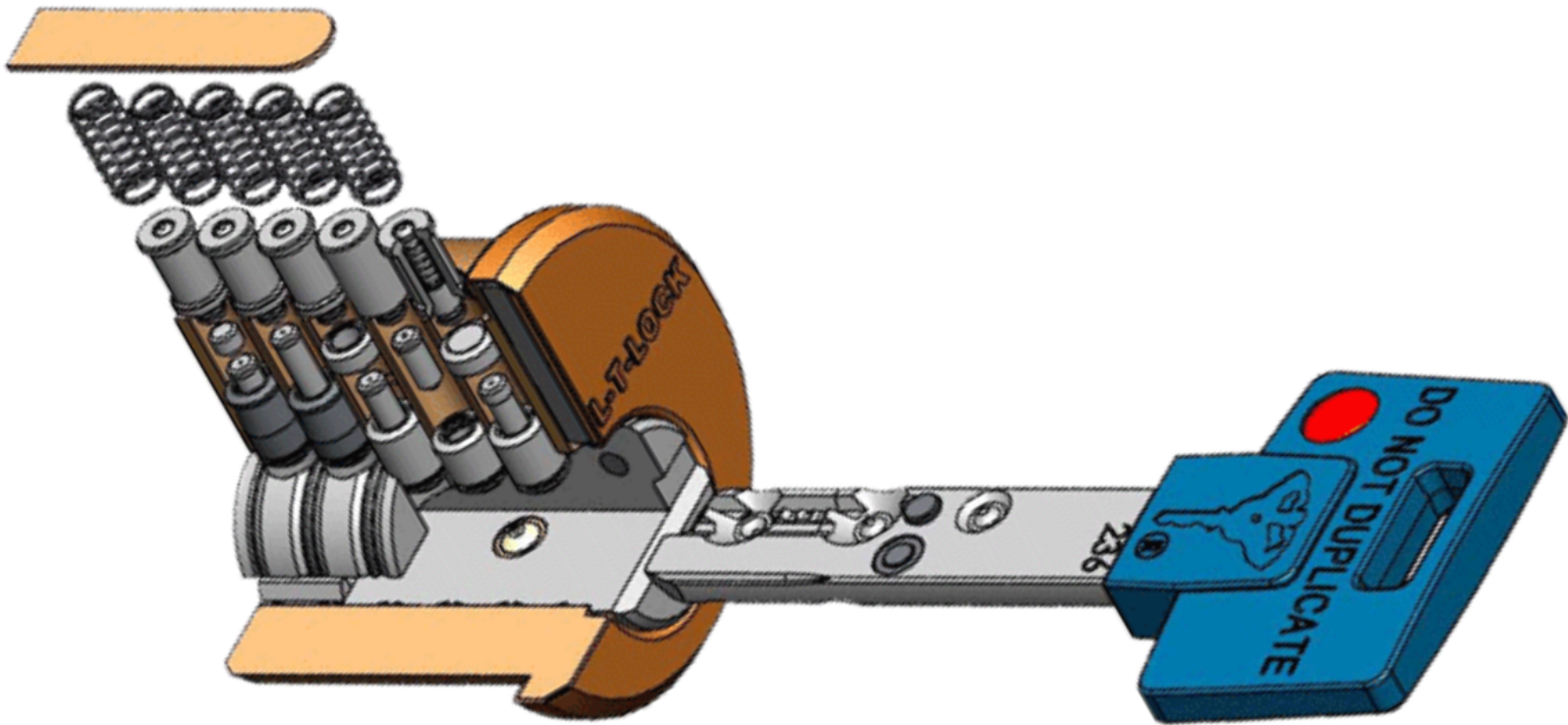


Could we make the key reversible?

Could we make the key reversible?



Yo, Dawg, I Put a Pin in Your Pin!



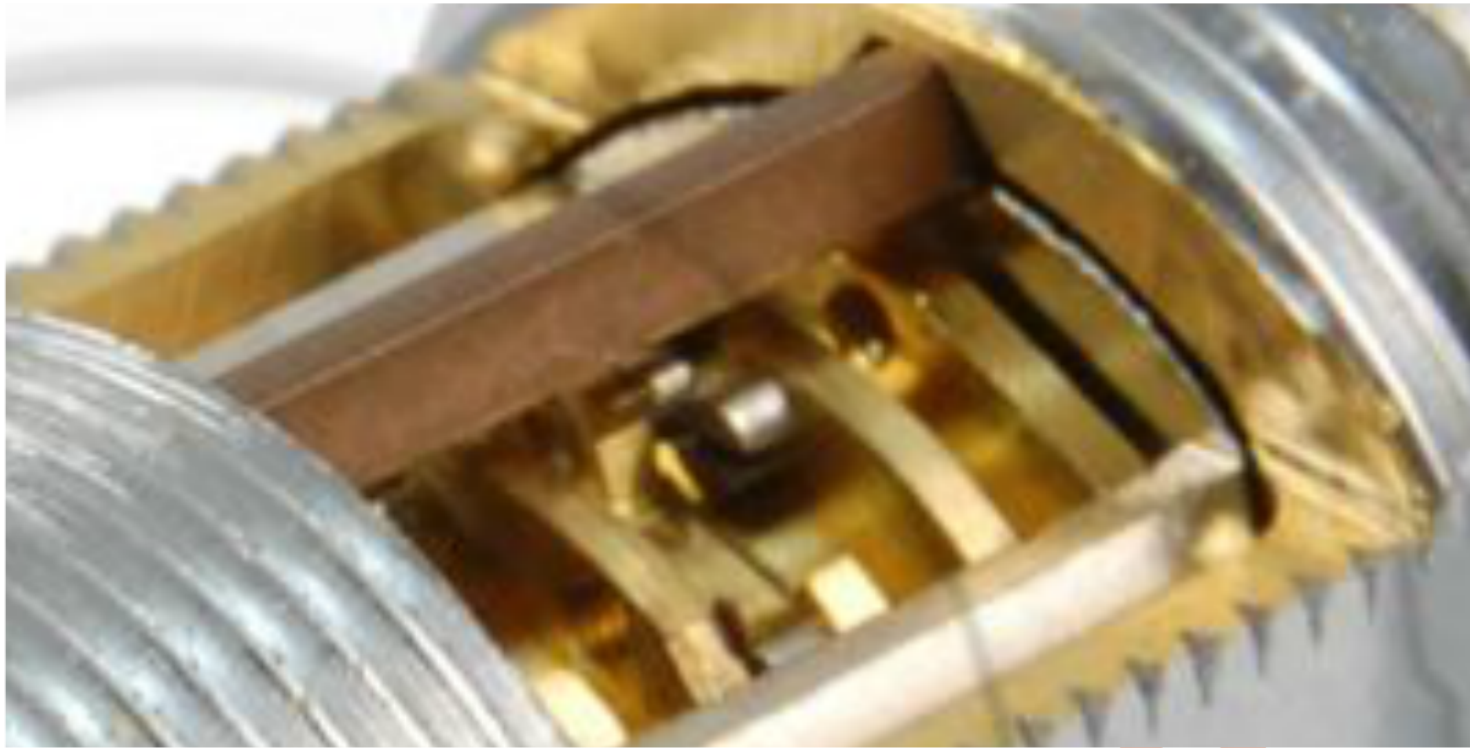
Any Lock Opened By Key Can Be Picked



Sesame & Other Combo Locks



Easy to Brute Force & Decode



key

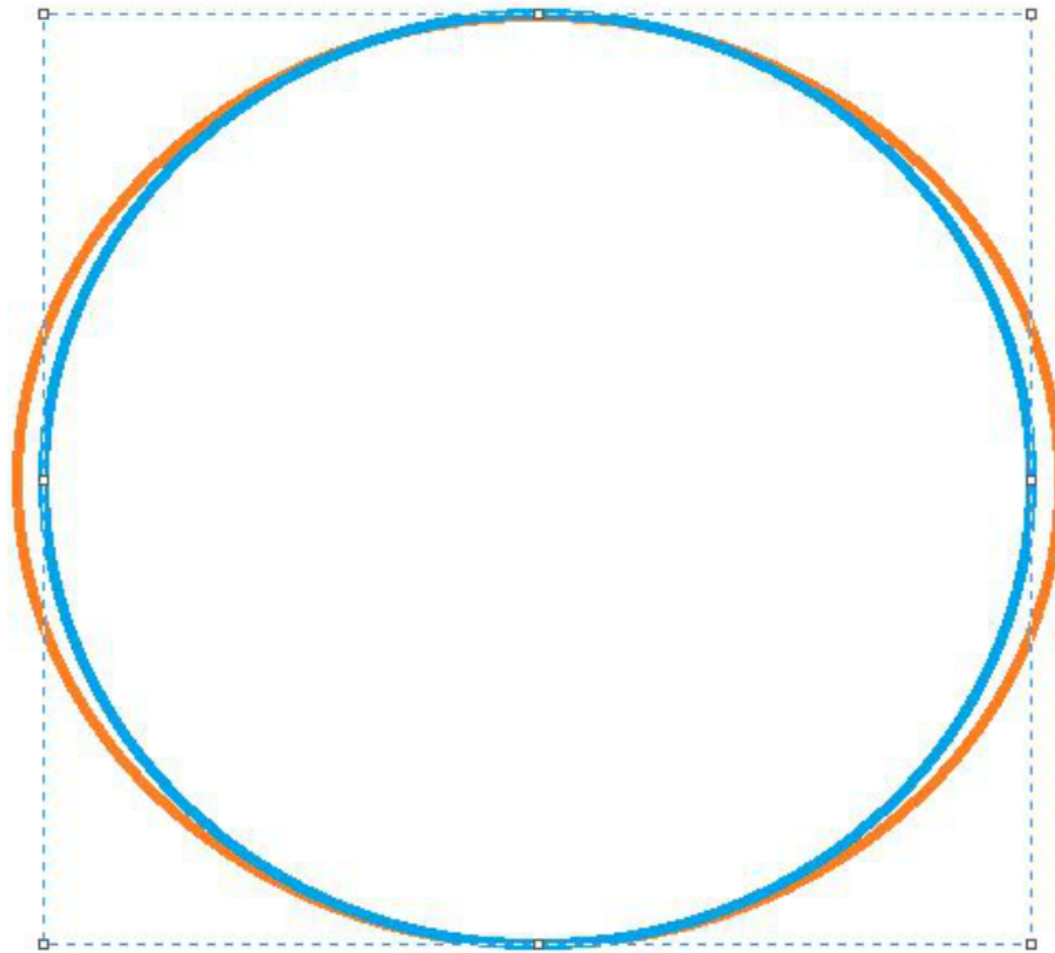
Easy to Feel



Micrometer Attack!



Oblong Wheels





Detent



Magnetic Fence!

Magnetic Fence!



Vibratory Attack





Form Factor



JUST ADD MORE!

Robokey



Add Key

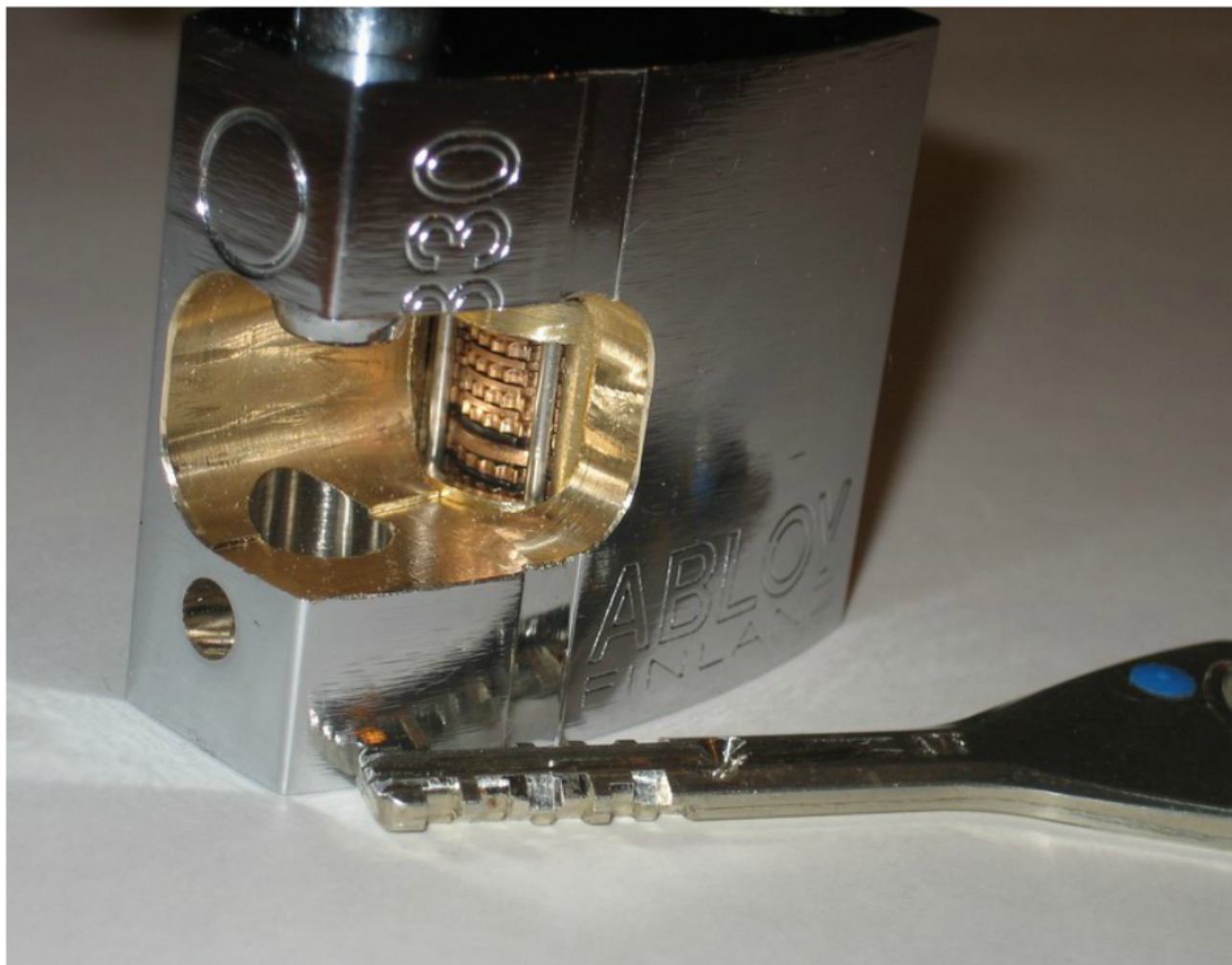
Add a Key?





TENTATIVE METHOD!

WE SOLVED IT!



It's So Easy to Dupe Keys!



Patents!

Patents!

OFTEN IMITATED. NEVER DUPLICATED.



Schlage introduces a new standard for key control.

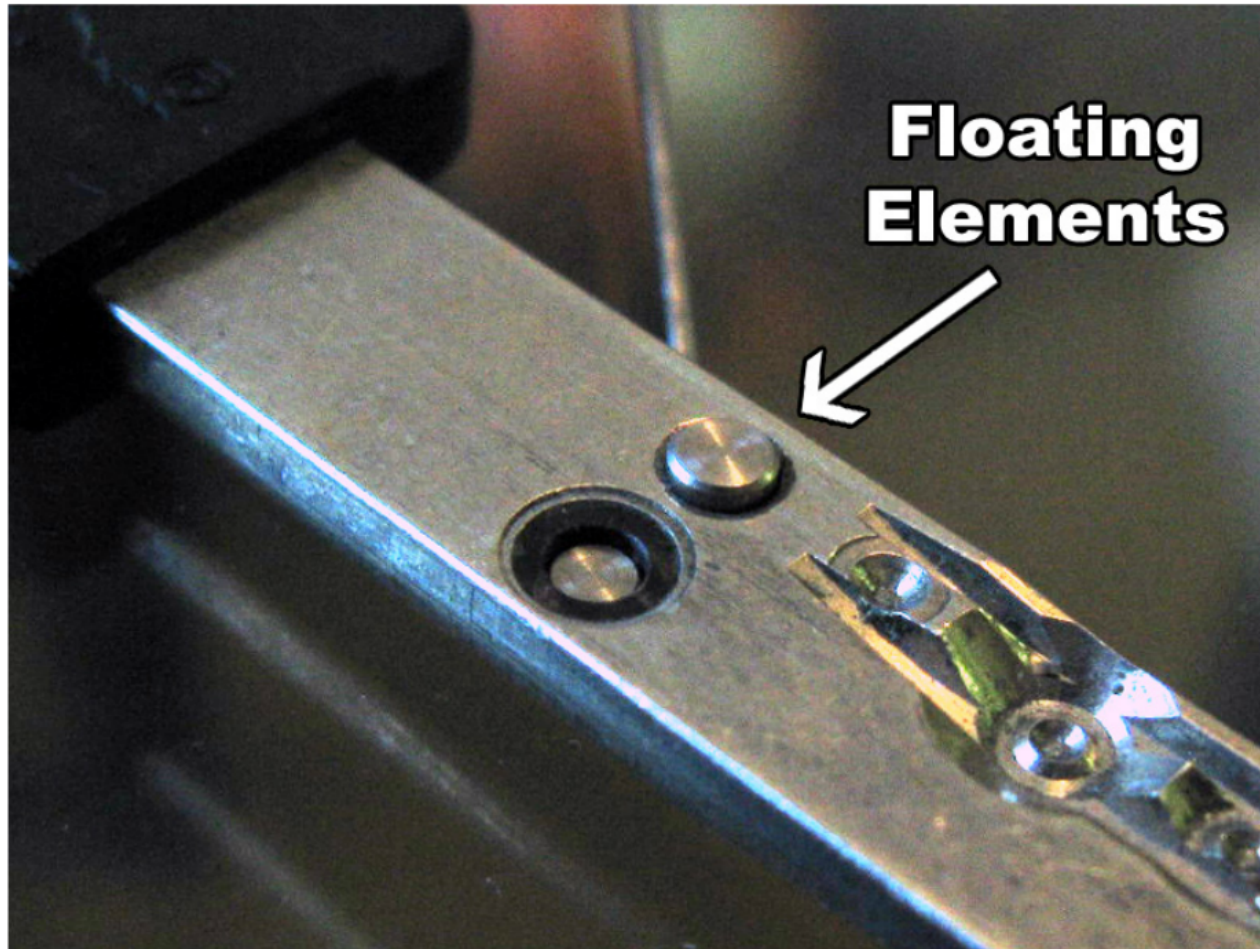
Schlage's high-security Everest Primus and medium-security Everest cylinder and key management systems provide the optimal flexibility in key control and affordability. Our medium- and high-security products can be mixed in the same key system and are upgradable, enabling you to tailor security and cost to meet your exact needs. Both levels of security cylinders offer longer patent life (extends controlled key distribution), have keys that can be cut on standard machines (for maximum convenience and savings), and are available in a full range of cylinder types.

"Protected by 4 utility and 2 design patents"

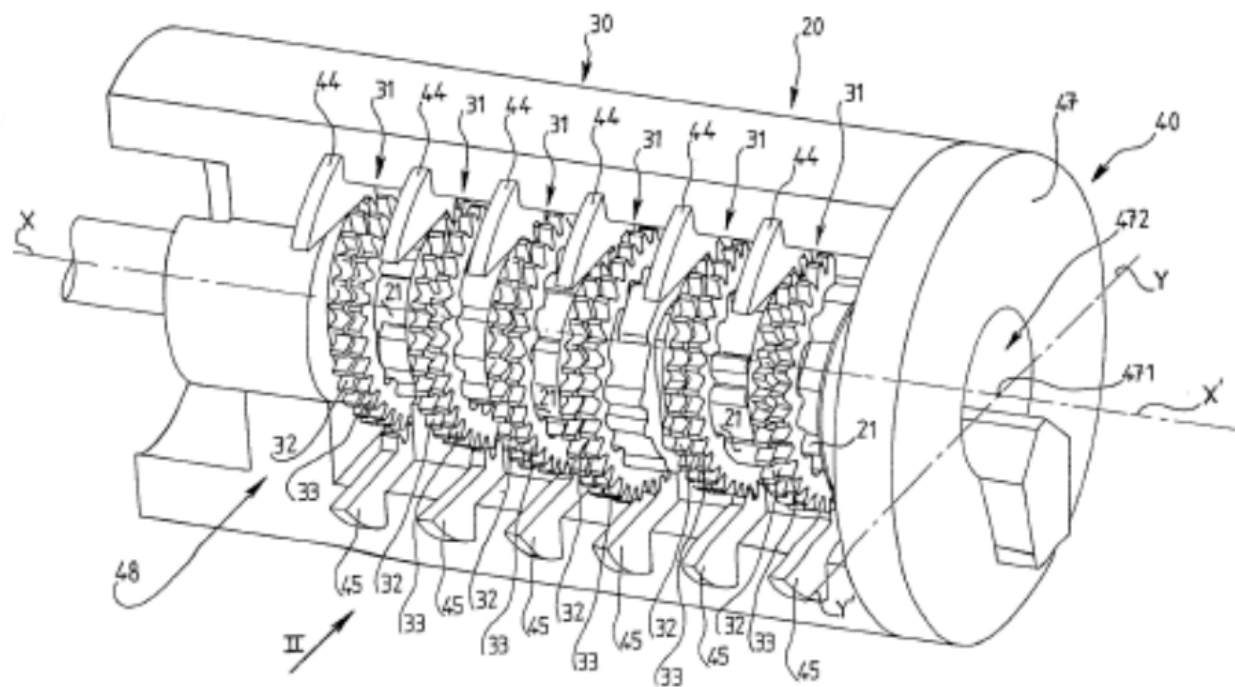
Trademarks



Moveable Element



<3 Fichet



Many Thanks:

The inimitable Peter Field

Han Fey

Matt Duplessie

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