



smartLock

brief description:

smartLock is the original and best high quality box lock. Introduced early in 2017 to be a partner to the already popular *smarHinge*, it is the only 1/4 turn, 'live action', full mortice box lock available.

main features:

- beautifully made and finished in the UK
- simple, elegant design
- robust 'live action' locking/unlocking
- 1/4 turn to lock/unlock
- secure hook action
- full mortice fitting
- easiest of any full mortice box lock to fit
- simple, elegant key
- available in polished brass, stainless steel and gold-plated
- matches *smarHinge* perfectly

full description and context:

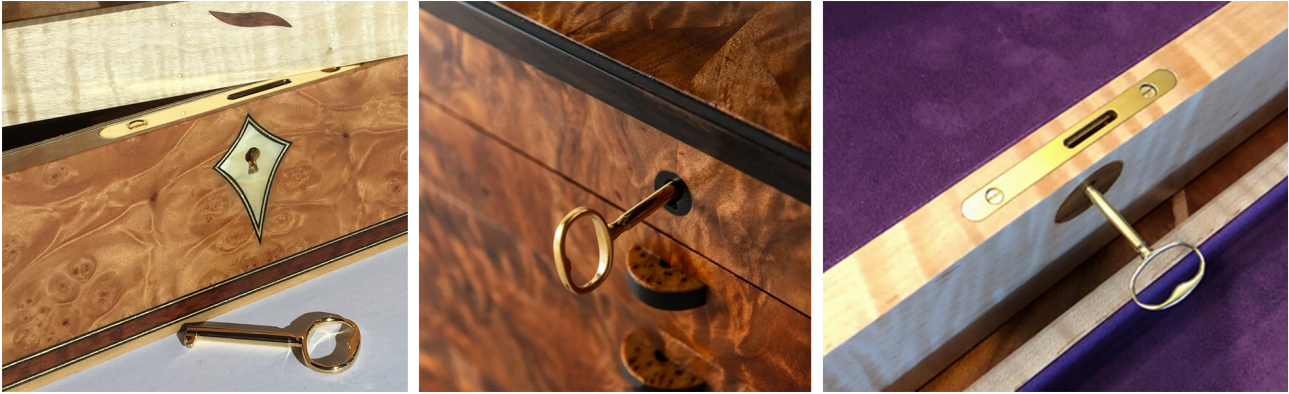
Having introduced the *smarHinge* early in 2011, it soon became clear that I should offer a matching box lock, so I started to look into the possibilities.

I'm a box maker, and have been for almost 40 years, and in that time I've used every lock available, and experienced the shortcomings and advantages of all of them! Consequently a great deal of careful thought has gone into the design of this one.

I have drawings of the basic concept of the *smartLock* going back to 2014, but it took a further 3 years and a great deal of experimentation to arrive at the current format. The *smartLock* was finally introduced in March 2017.

The result is a distillation of traditional and modern elements, incorporating all the best features from old and modern locks alike, with a few new ideas added along the way.

As with my other hardware, the *smartLock* is not just a marginal upgrade of an existing lock, it is designed from scratch, to be the best box lock it can be. Consequently everything about the *smartLock* exudes quality and it has regularly been described as the Rolls Royce of box locks.



Some of the beautiful work featuring the **smartLock**

full list of features:

- simple, elegant, robust design
- innovative 'live action' locking/unlocking - unique design gives the firmest, smoothest, crispest, most satisfying action of any box lock. Once experienced, nothing else will do
- 1/4 turn to lock/unlock – no wasted motion as with the more usual 3/4 turn
- secure hook action - positive locking
- full mortice fitting
- easiest of any box lock to fit - round ended plates to fit routed mortices
- available in polished brass, stainless steel and gold-plated
- elegantly designed and beautifully made key – not too traditional, not too modern – loosely based on a Georgian pattern bow, superior to anything currently available
- extra keys available
- secure key pin: with a full mortice lock the pin can't protrude beyond the casement as it can with a half mortice lock ... so it has to be relatively short. The key fits snugly on the pin so no wobbling here ...
- long plates – elegant look and allows screw holes to be well away from casement mortice, so no squaring off necessary. Also allows screw holes to be well away from the plate ends – looks good and allows plates to be squared off for a more traditional look, or otherwise customised
- screw holes are incorporated into shallow vertical chimneys. This places the screw heads fractionally below the surface of the hinge leaves, hiding any shadow that might be present due to inconsistent screw heads. Shadows that can show with a plain countersink are ugly and can give the appearance that the screw isn't screwed home properly, tempting the user to over-tighten, potentially leading to screw breakage.
- beautifully simple, elegant design – blends with a wide range of styles
- matches *smartHinge* exactly
- the easiest of any lock to install
- ultra-slim casement, only 5mm thick – so less material to remove to accommodate the casement, facilitating safe drilling with a standard 6mm brad point bit well in from routed mortices for plates
- plates are exactly the same thickness and width as the *smartHinge*, so the same table-mounted router setup - cutter, height and fence position - can be used to fit both
- can be fitted with either 8mm or 5/16" cutters

- no undercutting of the top plate needed to accommodate the latch/hook
- low keyhole allows for a wide range of escutcheons to be fitted ...
- sighting mark in the end of the key pin makes it easier to sight when forming the keyhole
- narrow 'bit' at the end of key is designed to allow a well proportioned, elegant keyhole with a narrow 'waist' ...

NB: It should be pointed out that the *smartLock* is in fact a 'catch' rather than a secure lock - a determined 4 year old could open one with a bent pin ...

'live-action' torsion spring mechanism explained:

The action of almost all simple box locks and catches relies on a compression or leaf spring, the purpose of which is to effectively lock the mechanism in one of two set positions, arrived at by turning the key: locked and unlocked. But the influence of the springs between those 2 positions only creates friction, rendering the action sluggish.

It's a perfectly acceptable system - traditional, tried and tested - but I always wanted something better, brighter, 'livelier'. So in 2016 I developed the *smartLock* action, based on a twin coil torsion spring:

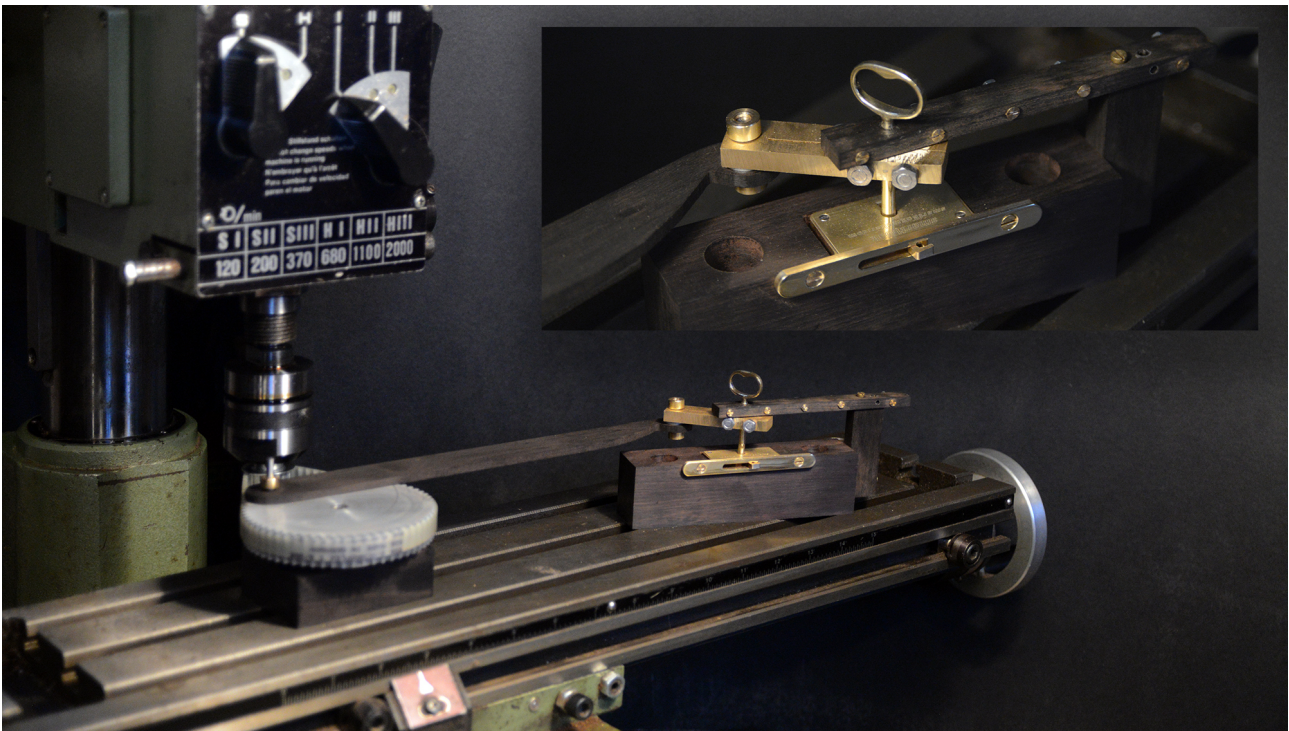


The huge advantage of using a torsion spring is that its influence is always 'live' - that is, initially it exerts a force against the turning of the key - gradually increasing until it reaches the half way 'tipping' point when it takes over and snaps the locking arm to the opposite state. Once experienced, nothing else will do ...



The twin coil torsion springs produced specially for the *smartLock* to my design are precision made and shot-peened - a process used to strengthen and extend the life of high end components used in formula 1 and other high stress environments.

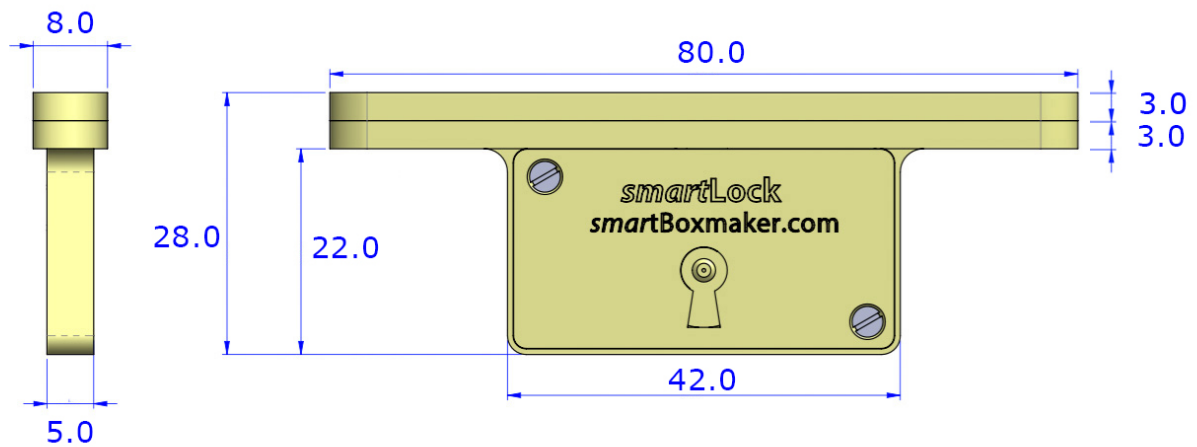
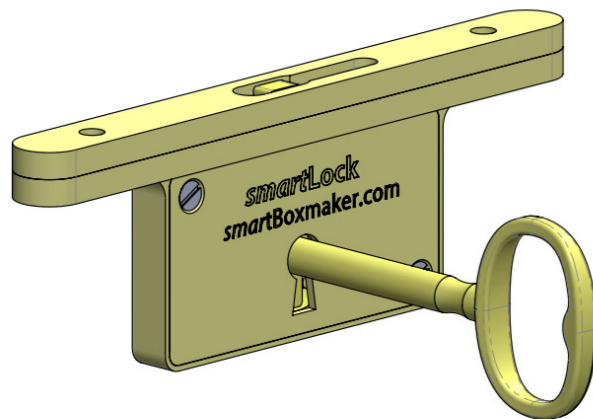
During the development phase in early 2017 the mechanism was tested multiple times to 50,000 iterations with no mishap.



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Andrew Crawford
Shropshire, UK

smartBoxmaker.com
ACfdb@fine-boxes.com
07939 541627



smartLock dimensions:

plates:

- length – 80mm
- width – 8mm - actually $7.96 \pm 0.03\text{mm}$ allowing fitting with 8mm or 5/16 for US users
- thickness – 3mm

casement:

- 22 x 42 x 5mm
- overall height of lock 28mm
- height of key centre – 16mm from top



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