



LOCKS & KEYS



Issue 4

The Newsletter for lock collectors

November 1997

Comment please

Welcome to new subscribers, and welcome back to readers renewing. This issue contains some extra pages, to include more of the material about Cotterill locks than would have been possible in the normal size.

However, whilst I enjoy the work of putting together the *Newsletter*, and some contributions have come in from readers, there are very few subscribers. The first year reached about half way to the break even number of 100. So far only about half have renewed.

I welcome comments about the *Newsletter* - preferably directly to me. Can anyone help to make the *Newsletter* better?

There are certainly more lock collectors out there whom I do not know, and most do not know about the *Newsletter*. It urgently needs more subscribers, and at present I cannot afford any more advertising. Can you encourage more collectors to subscribe? Many of you do have contact with other collectors, and some of you in the locksmithing trade presumably meet interested customers, possibly in the antique or real estate, businesses, or police. The prize for recruiting more subscribers is continued survival of the *Newsletter*!

"Locks & Keys" urgently needs more subscribers! Do you know any other collectors?

Edwin Cotterill & Company

Braham and Chubb are the best-known locks from the nineteenth century. Another lock which the collector has some chance of seeing is the Climax lock.

Little is known about Edwin Cotterill. He was a member of a family which had various businesses in the engineering and lock trades in the Birmingham area in the nineteenth century. Some research would be needed to discover the relationships of at least two generations. Most of these businesses were a 'cottage industry' of backyard workshops employing the family and only one or two men and a boy. Many such businesses continued into the twentieth century. A few moved to new industrial sites and built factories, growing to employ more men.

Cotterill's name (there are several variants) is an early Norman surname, meaning a maker of chain mail, or a cutler - a maker of knives. No doubt such craftsmen could work either craft according to market need, until the demand for chain mail declined completely.

Cotterill's patent

Edwin Cotterill obtained a patent in 1846 (No. 11,152) for "Certain improvements in articles applied to windows, doors, and shutters". As a curious aside, Berwick-on-Tweed having changed hands 13 times between 1147 and 1482, the town wished to be included in neither Scotland nor England. Until 1852 patents lasted for 14 years, and it was permissible to enrol any number of different inventions in one patent.

This was a wide-ranging patent, and (continued on p.2)

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Edwin Cotterill & Company's locks continued from page 1

covered several latches. Some had the latchbolt sliding in the deadbolt.

"E. Cotterill's Patent Climax Lock"

This lock became well-known as "E. Cotterill's Patent Climax Detector Lock". It was derived from the Bramah lock, (whose patent had long expired). Though it used

his figure, but might be in the channel in which the slider moves] which falls into the groove [in which the sliders slide?], so that the true key cannot open the lock until by a peculiar backward movement the detector is disengaged; this detector is not likely to be thrown by accident.' Presumably Cotterill & Co. made various qualities, only the

17th. "The construction of a padlock, in which the mechanism for locking the same consists of a rim or circle in one part thereof, turning in a groove in another part thereof, the said rim or circle being interrupted or cut away in certain places, and the said groove, in which the said rim or circle turns, being also interrupted by a series of bars moving radially, notches or indentations being cut in the said bars, which, when the key is introduced, are made to coincide with and make continuous the said groove, and thereby allow of the rotation of the said rim or circle."

Patent Abstract

the same principle, it was differently arranged. It used the same halving joint and also copied Bramah's cylinder principle. Unlike the Bramah lock, the sliders moved radially with respect to the key, instead of axially as in the Bramah. Also, each slider had its own coil spring. Instead of slots cut in the end of the key, the Climax used inclined grooves cut in the circumference of the key near the end. The locking ring was inserted into the cast brass cap, instead of being at the back of the plug¹.

As originally conceived, a varying number of sliders could be used, according to the quality and security required. The original design did not have a detector, and in this form the Climax lock was picked by Mr Alfred Hobbs, the representative of Day & Newall. Mr Hobbs came to Britain for the Great Exhibition, so this was presumably about 1851, or possibly 1850. The lock was then quite new, and probably not in wide use.

The "Climax Detector"

After this defeat, Cotterill added a detector. None of the early descriptions is very explicit on exactly how the detector operated, nor how it was released. Sliders pushed out too far - as they would be by a blank key, for example - were caught and held. Price says: 'Should an attempt be made to open the lock with a false key, the slides would be projected too far, and would be retained in that position by a spring-catch or detector [which cannot be clearly seen in

best quality actually being fitted with the detector. Locks made later without the detector were, however, marked 'CLIMAX DETECTOR' on the side of the bolt.

Mr Cotterill challenges Mr Hobbs to pick the "Climax Detector Lock".

There was a lengthy, that is, verbose, public correspondence in *The Times* in 1853 between the two over Cotterill's challenge to pick the improved lock. Mr Hobbs was, it seems fair to say, treated somewhat churlishly, even dishonestly, by British lockmakers. But the outcome of this slanging match was that Hobbs declined to accept Cotterill's challenge². Probably Hobbs had privately attempted the Climax Detector, and had been unable to pick it; he did not purpose to fail publicly. In 1855 Cotterill added a further improvement, the double-click.

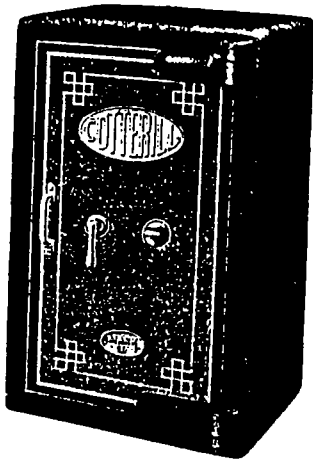
The double-click

In the original lock, the locking ring was machined from brass, then pressed permanently into the inside of the cast brass cap. In locks fitted with the double-click, the locking ring is (spring?) steel, loosely attached by 2 small screws. The screw-holes in the ring are elongated, so that if the plug is turned without being unlocked, it can turn a couple of degrees either way.

Any attempt to turn the plug before the sliders are moved to the unlocking positions results in the click oscillating into a notch in the circumference of the plug, and preventing further rotation of the plug. The ends of at least 2 sliders were also notched, creating the effect of spool pins in a pin tumbler lock. The click could only be released by releasing tension tending to turn the plug, but the lock could not be picked without first applying such tension.

This turning off-centre idea was, incident-

Edwin Cotterill & Company's locks continued from page 2



tally, used in 1969 for a cylinder rim lock by 3M in America. It combined an alarm buzzer with the lock in the rim case; if the plug were turned off-centre for more than about 3 seconds, but not rotated enough to withdraw the bolt, the alarm sounded. Thus it signalled an attempt to pick the lock cylinder. It only sounded inside the premises. It does not seem to have been long on the market.

Other Bramah derivatives

Several other locks were also derivatives of Bramah's principles. One which rather closely resembles the Climax in appearance, and key, is Mappin's lock (Walter Sandell Mappin, Patent No. 140 of 1862) made by the safe-maker [Samuel] Whitfield & Sons, which later traded as [Frederic] Whitfield & Co., Birmingham. This has a mechanism enclosed by a similar cap, inside which is a flat cylinder within which a plug revolves. The outer cylinder is fixed to the cap. Plug and cylinder are locked at rest by a pin and driver, in the manner of Yale's lock, but with the pins arranged radially as in the Climax. The pins are not round pins, but flat. They are pressed by a single helical spring wrapped around the cylinder. There is friction applied to turning the plug by a leaf spring, in the manner of a check-spring acting on a curtain in a lever lock. Cotterill picked one of these locks in under four hours.

"Jewelled gewgaws"

Many safes of inferior quality were made in the nineteenth century. Fire-resisting safes date only from the 1840's; yet within a few years, whilst industry and commerce were thriving and growing, there was also a thriving trade in *second-hand* safes. Actually, inferior safes ('jewelled gewgaws', typically green-painted and gold coach lined, like quality safes) were being made new to be sold as second-hand to excuse their cheap price, and prey on gullible, ignorant, or plain greedy customers. Many of these safes were also exported to the colonies, where the most shoddy of merchandise was thought good enough. Perhaps there, the natives had fewer safe-breaking resources, or were deterred from even trying.

In Scotland, one 'second-hand' safe overbalanced at auction, and burst apart(!) to reveal a fireproof lining of fresh turf, with live worms in it. Many had outer bodies thinner than the sheet metal linings of quality safes. Chubb complained about their locks: 'The lock,

purchaser, is frequently of good make, but of a kind never intended for a safe. Locks made for wooden drawers are constantly bought and used for this purpose, although totally unsuitable, and in spite of all proceedings that can be taken to prevent it. A lock for this purpose requires to be, first, very strong, and protected by hard steel, so as to be drill-proof; second, completely gunpowder-proof; third, simple in construction. Locks on such safes as we are now describing are seldom anything but the last, and not always that.¹³ Climax drawer locks were certainly used on such safes. Many early safe locks were fitted not to the back of the door, but to the boltwork case, so that their fixing screwheads faced the back of the door. These locks were fixed by only 2 screws: a hole drilled through the door could allow 1 fixing screw to be undone, so that the lock could pivot clear! Some locks had the nozzle extended, and a thick hard steel disk could spin on it. Before twist drill bits became common, this was quite effective anti-drill protection.

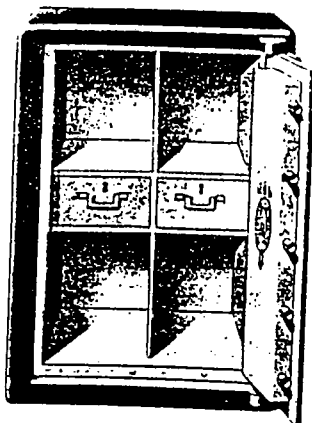
Other locks similar to the Climax

There were 2 other locks made similar to the Climax in principle, only slightly rearranged. Aubin's Vibrating Guard Lock had guards or levers set radially in grooves. They were pivoted on a wire ring, which fitted in a circular groove in the cylinder. The key was like a Bramah key, and had to be pressed down until the cuts in it came into contact with the small end of the levers.

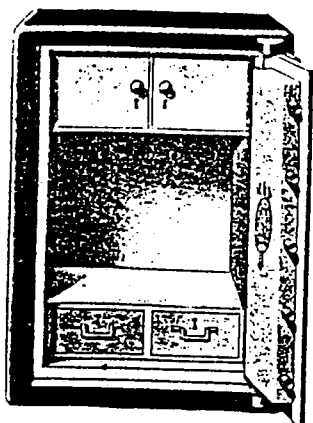
I do not know the date of this Aubin lock, nor whether it was actually produced. A similar lock¹⁴ was made by the Paris company of Bauche, in some numbers, and is still in production. The Bauche lock used a pin key with radial ribs, which are milled concavely to various depths. It pushes the small end of the levers outwards instead of downwards (See illustrations p.5).

Cotterill and Wilson

In 1885 Cotterill & Co., then at 93 Great Charles Street, was a creditor in the winding up of Birmingham ironmonger [Henry] Fear & Rowley, who also had a branch in Manchester. *The Ironmonger* of March 29 1890 reported that S. Cotterill & Co., Phoenix Safe-works, Cambridge Street, took over F. E. Wilson & Co. (The initial S is probably a typographic error). Peter Wilson had two lock designs, which were made by Cotterill & Co.



TYPE G
Code: Batter



TYPE H
Code: Bay

**Cotterill safes,
1920-**

Edwin Cotterill & Company's locks continued from page 3

Wilson lock: it was usually marked E Cotterill & Co. Wilson's Patent. Confusingly, some of these locks were also marked E Cotterill & Co. Acme Patent. That was the usual marking of Wilson's other design.

The Cotterill-Wilson lock (Peter Wilson, Patent No. 3257 of 1869), is a lock with end-gated levers and enclosed bellies. It used a pin key with cams instead of straight steps. The pin was used to move aside the escutcheon which protected the keyhole from dust and weather. It was claimed to be impossible to impression this lock through the keyhole. The lock appeared in 1870, when the Climax Works was in Vittoria Street.

Acme Patent Lock

The Acme Patent lock used conventional pocket levers. Its distinctive feature was the shape of the key and keyhole. The key was an inverted V-shaped double-bitted key, and the keyhole an inverted V to match. The bolt lathe had not one, but two, shallow, talons for the bolt steps of the key, in the manner of a double-throw lock. Because the key had two bits, it achieved a slightly long throw with a single turn. The bolt steps were rather short, and the operation approached that of a rack and pinion. The main virtue of the Acme lock was that its peculiar keyhole immediately excluded all but its own peculiar key. The same idea has been used for several locks in more recent times by Chubb & Sons. The date of the Acme lock is uncertain, as its patent has not been traced, but it was probably about 1880.

Range of lock functions

The Climax, Cotterill-Wilson and Acme locks were made in a range of functions. Acme locks at least were made with 2-sided operation, by a symmetrical key. Large numbers of Cotterill padlocks were made, the same distinctive turret shape and sliding shackle being used for all three mechanisms, (and Cotterill lever locks), in at least 2 sizes. The quality of workmanship of Cotterill & Co.'s patent locks was excellent, and many padlocks have been in service for well over half a century at least. Cotterill had designed a Climax safe lock by 1850, but I cannot confirm that it was actually made. The key directly threw 8 bolts four ways. The Cotterill-Wilson had a design offering dual control - a second key (sometimes of a smaller size) in a second keyhole threw a blocking plate across the first keyhole. This was intended mainly for safes, but was also made as a grille-gate lock. All three mechanisms were made in a range of functions.

Cotterill & Co. also made a range of basic lever locks and latches, and sliding shackle lever padlocks, in a range of qualities: and letter combination locks with 3, 4, 5, 6, or 7 rings.

At a date unknown, (pre-1873), Cotterill started making his own 'Defiance' safes and strongroom doors. These were strengthened against attack by wedges. Cotterill & Co. used Climax or Cotterill-Wilson locks on their early safes. In 1920 the Climax Works, then at Ludgate Hill, Birmingham, introduced a new range of safes. They were 12-bent with round bolts and single plate doors 3/8" to 1/2" thick, with strong frames. They used the 'Cotterill solid block unpickable 7-lever lock', (no more details are in their catalogue), protected by additional drill-proof steel plate. There were 5 sizes, with 16 standard interior fitting choices.

The company was doubtless engaged on war work during the Great War. Afterwards it diversified into components, including pressings, for the motor industry. There must have been a large investment in plant, especially a press capable of cold bending thick steel plate. Cotterill & Co. probably was a victim of the Depression, for no records can be found after 1930.

¹The Climax Detector Lock was described in PRICE, George, *Treatise on fire and thief-proof depositories and locks and keys*, London, Simpkin Marshall, 1856, pp. 486-492. This shows a lock with 20 sliders. The original form, without detector or clicker, is described in *Practical Mechanic's J.*, V2 (1849-1850) pp. 183-185. This shows padlocks with 8 and 12 sliders, and a safe lock throwing 8 bolts.

²PRICE *op. cit.* reprints the correspondence in his chapter on the 'Lock Controversy', pp. 704-708.

³CHUBB, George Hayter, *Protection from fire and thieves ... 1875*, pp. 52-53.

⁴ERAS, Vincent J. M., *Locks and keys throughout the ages*, 1957 (i.e. 1941), pp. 133-135.

For Sale

George and Val Olifent, who provided the pictures of moneyboxes, have some moneyboxes for sale. Please send them an a/c for a list, to: 'Pilgrim's Progress', Far Back Lane, Farnsfield, Newark, Notts NG22 8JX.



A.D. 1846 N° 11,152.

Doors, Windows, and their Fastenings.

COTTERILL'S SPECIFICATION.

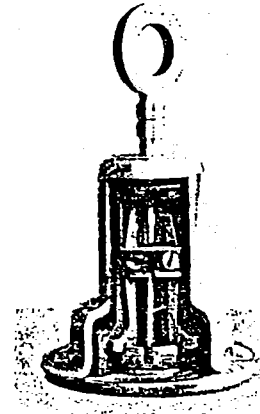
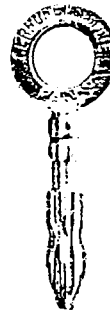
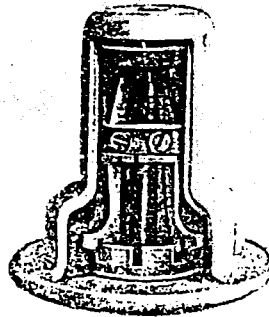
TO ALL TO WHOM THESE PRESENTS SHALL COME, I, EDWIN
 COTTERILL, of Birmingham, in the County of Warwick, Manufacturer, send
 greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her
 5 Royal Letters Patent under the Great Seal of Great Britain, bearing date at
 Westminster, the Twenty-fifth day of March, in the ninth year of Her reign,
 did, for Herself, Her heirs and successors, give and grant unto me, the said
 Edwin Cotterill, Her especial licence, full power, sole privilege and authority
 that I, the said Edwin Cotterill, my exors, admors, and assigns, or such others
 10 as I, the said Edwin Cotterill, my exors, admors, and assigns, should at
 any time agree with, and no others, from time to time and at all times during
 the term of years therein expressed, should and lawfully might make, use,
 exercise, and vend, within England, Wales, and the Town of Berwick-upon-
 Tweed, the Invention of "CERTAIN IMPROVEMENTS IN ARTICLES APPLIED TO
 15 WINDOWS, DOORS, AND SHUTTERS," part of which have been communicated to me
 by a certain foreigner residing abroad, and part invented by myself; in which
 said Letters Patent is contained a proviso, that I, the said Edwin Cotterill,
 shall cause a particular description of the nature of the said Invention, and
 in what manner the same is to be performed, to be enrolled in Her said
 20 Majesty's High Court of Chancery within six calendar months next and
 immediately after the date of the said in part recited Letters Patent, as in
 and by the same, reference being thereunto had, will more fully and at large
 appear.

Cotterill and Co.'s Safes.

Messrs. Cotterill and Co., of Birmingham, are the makers
 of a very simple and useful safe, which they have named
 the "Defiance," as it is claimed to be both thief and fireproof.
 The principle of these safes is that they are made drill-
 proof, and the doors are so fitted that a jemmy or other
 lever of the kind cannot be placed between the door and
 sides of the safe, as the door is close fitting within a rabbet,
 and securely fastened on all sides with powerful bolts, as
 shown in the engraving.

The wedge is rendered powerless by this contrivance, as it
 can only tighten the dovetails, and thus increase the resisting



E. COTTERILL & CO.,

MANUFACTURERS OF BEST

Hand-made Heber Locks,

OF ALL KINDS, AND FOR EVERY PURPOSE

SOLE MAKERS OF

THE PATENT "ACME" LOCK,

The only Lock that has not been picked,

Fire and Burglar-proof Safes,

IRON DOORS, FOR STRONG ROOMS,
WITH T IRON FRAMES AND ANGLE IRON LOCK CASES.

The best and cheapest for security.

GILMAN WORKS,

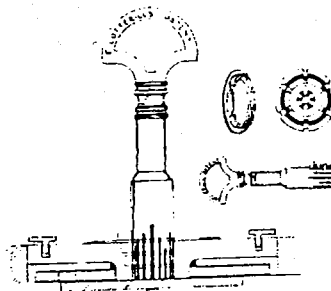
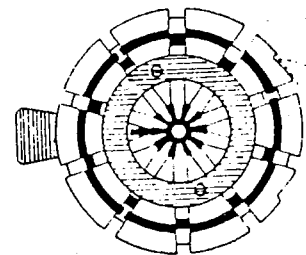
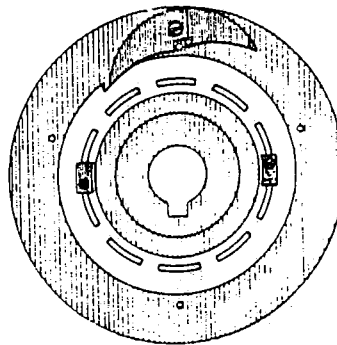
BIRMINGHAM.

THESE GOODS ARE MARKED E. C. & CO.

LIST OF PRICES FOR LEVER LOCKS, ONLY.

Locks of every description made from Architects'
 Drawings or Templates.
 FEBRUARY, 1855

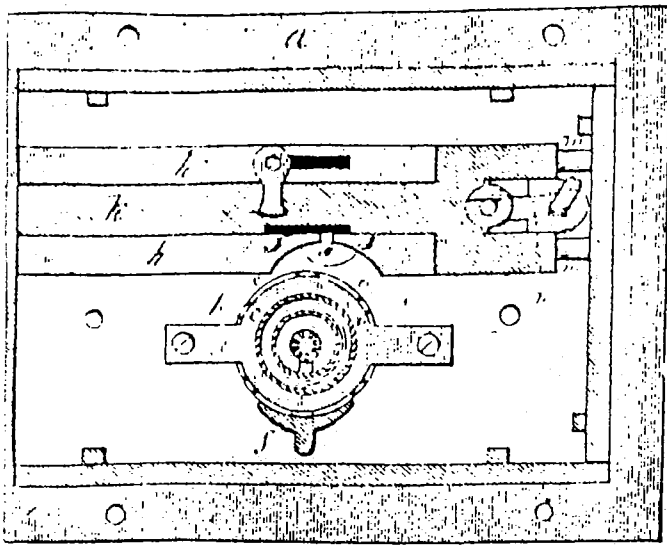
ALL FORMER LISTS CANCELLED.



Top: Bauche lock, c. 1930
 Above and left: Cotterill
 Climax Detector lock with
 double click, post 1855.
 (See p. 6 for the original
 form.)

Cotterill's improved Patent Climax Detector Lock with Angle Section.

Fig. 1.



see p. 8 for details

Fig. 2.

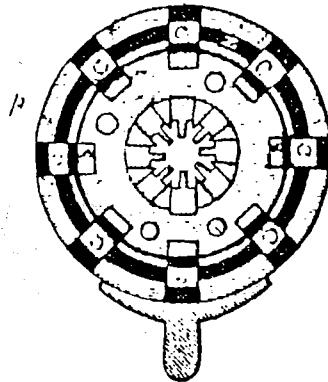


Fig. 3.

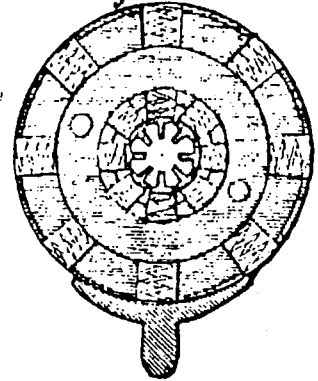


Fig. 5.

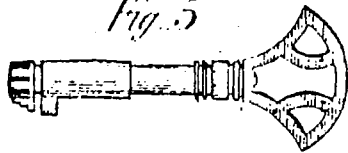


Fig. 6.

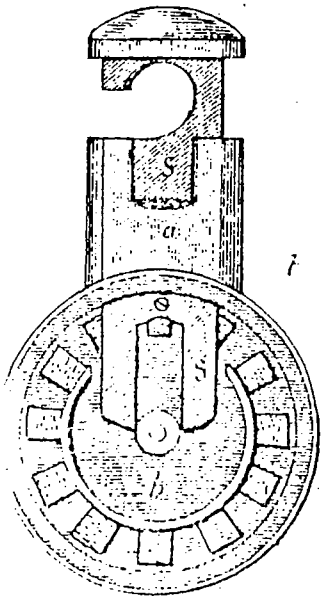


Fig. 7.

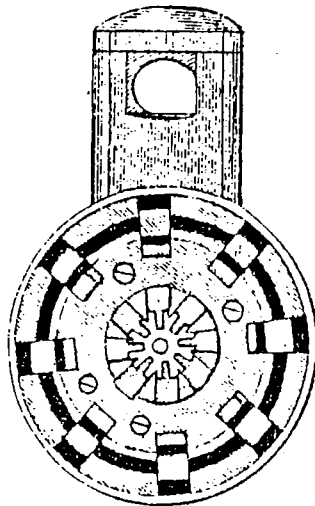


Fig. 8.

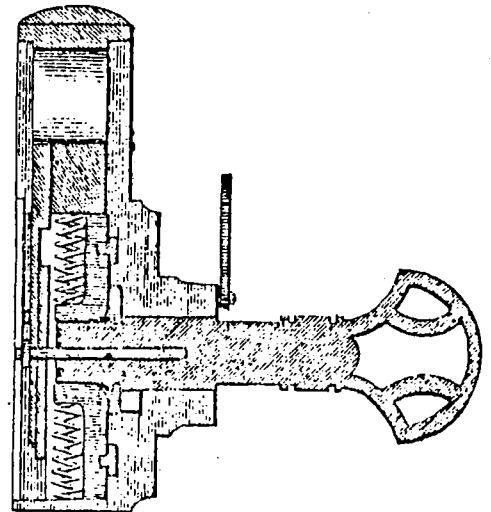


Fig. 11.

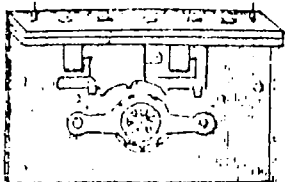
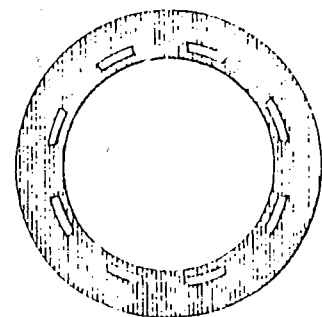


Fig. 10.



Fig. 9.

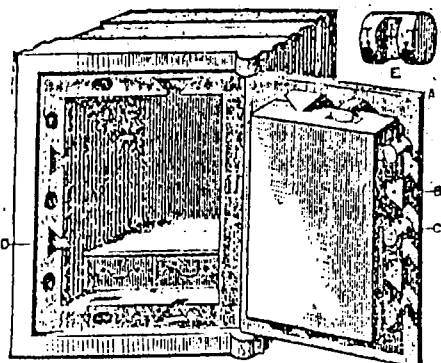


November 1st, 1873.]

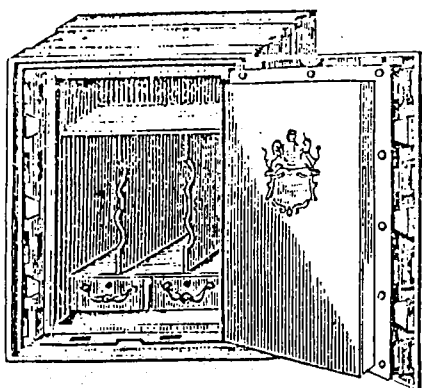
TITE IRONMONGER.

1345

powers of the safe; and to meet the possibility of a fine chisel getting in by the outer door, an iron-coated steel bar



lining the interior of the safe to resist further action, so that both bolts and chisels are useless for such a purpose. These



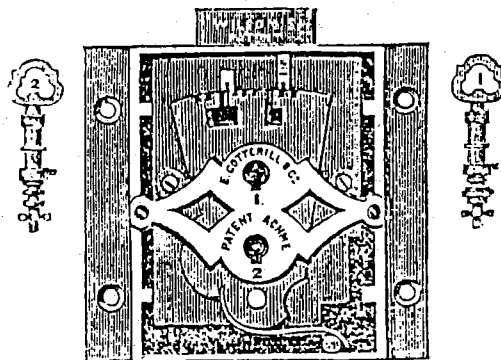
safes fitted with Cotterill's patent Climax Detector, or Acme Locks, which are powder-proof, offer good resistance, and have many admirers and patrons.

THE NEW PATENT ACME LOCK.

When referring to the subject of safes, it is important to bear in mind that the trustworthiness of most of these articles rest to a very great extent upon the real security of the locking apparatus, and therefore it becomes a question of serious consideration which is and which is not reliable. A lock to be reliable does not always require to be complicated, and experience goes to show in favour of simple mechanism, as complications too often tend to weaken just where strength is most required. We do not intend discussing the relative value of locks just now, as they will be hereafter referred to; but we wish to call our readers' attention to a new idea introduced by Messrs. Cotterill and Co., under the name of the Acme Lock, which we think our readers will deem an excellent article, offering many advantages worthy of particular note. The Acme principle is applied to all kind of locks, but it will be sufficient to explain their constructional value to our readers if we simply illustrate and describe the Acme double safe, or jewel case lock, and the Acme padlock.

It will be seen from the illustrations that a peculiar cylindrical form of key is adopted. Its diameter, and the necessity (if it is to open the lock) of its completely filling the small round key-hole, render any attempt to adjust a false key

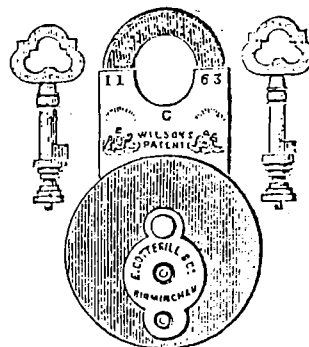
almost nugatory, while the form of such a key precludes the possibility of another being made like it from any impression or cast taken from the keyhole. As to the internal construction, the openings through which the levers with curved parts for the keys to act upon separately through a tubular keyhole being placed between and near the axis of the levers and their bearing points against the stump of the bolt adds much to the general strength, while diminishing the chance of the lock being opened by anything but the proper key.



JEWEL CASE OR SAFE LOCK.

In the No. 3 locks, every advantage of the system is combined to perfection by the addition of a sliding saddle piece or covering plate acted upon by an independent key for covering the keyhole of the lock when the bolt has been shot, so that, besides the difficulties of getting at the interior of the lock at all without its two proper keys, nothing can be effected by picks or false keys, unless both keyholes be open, nor even then, without successive movements in opposite directions being impressed upon the levers and bolt plate, which it seems impossible for any but the right keys to do.

Briefly stated, the advantages of the Acme principle are these:—The peculiar form of the key causes the cams to act with great power upon the bolts, so that they can be operated without much force being required, thus lessening the friction, and adding to the durability of the working parts. The danger of having a false key inserted and opening a lock seems almost impossible, and the key is very compact, strong, and convenient. The locks are made so as to be reversed to either right or left hand without trouble; and by means of a heart-shaped cam within the lock the spring bolt is acted upon by the door handle so as to enable the door to be opened by turning the ball handle in either direction, and when the spring bolt is shot it is wholly relieved from contact with the action of the stem of that handle.



ACME PAD.

In the padlocks constructed on this principle, extraordinary strength is attained by the form of the shackle, which slide

FIGURES 1, 2, 3, 4, represent a Rim Lock : Fig. 1, being a view of the Lock with the back plate removed ; Fig. 2, a front view of the revolving barrel, drawn on a larger scale ; Fig. 3, a back view ; and Fig. 4, a section of the same, as at Fig. 2. Fig. 5, represents the Key. *a* is the case of the Lock ; and *b* a cylindrical barrel, having a number of small steel slides, *c, c*, which slide in radiating channels in the face of the barrel, and are pressed towards the centre by spiral springs, *d, d*, contained in the barrel. A groove, *s, s*, is cut in the face of the barrel, and when the slides are forced outwards by the Key, form a continuous circular channel ; but when the Key is withdrawn, each of the sliders is forced in different degrees towards the centre, so that the solid parts of the slides intercept the groove in the barrel ; in this position of the slides, the barrel is held fast by an immovable circular ring, *e*, which fits into the groove, *s*, and has notches which embrace the slides, and the barrel is thereby held fast ; but when the slides are forced outward by the Key, the groove in the bolts coincides with the notched ring, and the barrel may be turned in either direction. *f* is an arm fixed to the circumference of the barrel, which first raises the lever at *g*, and then shoots, or draws back the lock bolt, by pressing against the horns of the bolt at *j, j*. *k* is the latch bolt, which slides in the channel, formed to receive it in the lock bolt. The bolt is pressed outwards by two spiral springs, in cylindrical cases, *m, m*, let into the heel of the bolt, and the bolt is drawn back by a cam, *n*, upon the knob spindle, and acting upon either of the studs, so as to withdraw the bolt by turning the knob in either direction.

The Key consists of a cylindrical stem, having a number of inclined grooves cut in the circumference, and acting upon inclines formed on the ends of the bolts. These grooves vary in depth, slope, and the angle they form with the axis of the Key. Should an attempt be made to open the Lock with a false Key, the slides *p, p*, are projected too far, and are retained in that position by spring-catches, or DETECTORS, which fall into the groove ; so that the true Key cannot move the lock until, by a particular movement of the Key, the DETECTORS are disengaged.

Figures 6, 7, 8, represent a Padlock upon the same principle. Fig. 6, being a back view of the Lock, with the back plate removed, and showing the Lock as open. *a* is the case of the Lock ; *b* the barrel, containing the slides similar to that already described, and held by a notched ring on the back of the front plate, and therefore not seen in the figure. On the back of the barrel is a portion of a circular ring, *r*, having a gap or space equal to the breadth of the shackle, *s*, and a groove is formed in the shackle to admit the ring ; the lock is closed by pushing in the shackle, and turning the barrel by the means of the Key, so as to bring the gap in the ring downwards, whereby the ring itself is brought into the groove in the shackle, and prevents the shackle being withdrawn. By turning the barrel, so as to bring the gap upwards, the shackle is released from the ring, and may be withdrawn, and disengaged from the staple ; a stud, *t*, on the back of the shackle, prevents it being drawn out too far. Fig. 7 is a front view of the lock closed, with cap and notched ring removed ; Fig. 8, a section of a Lock complete ; Fig. 9, a notched ring detached ; Fig. 10, a slide and spring. Fig. 11, represents a Cabinet Lock, with cover removed.

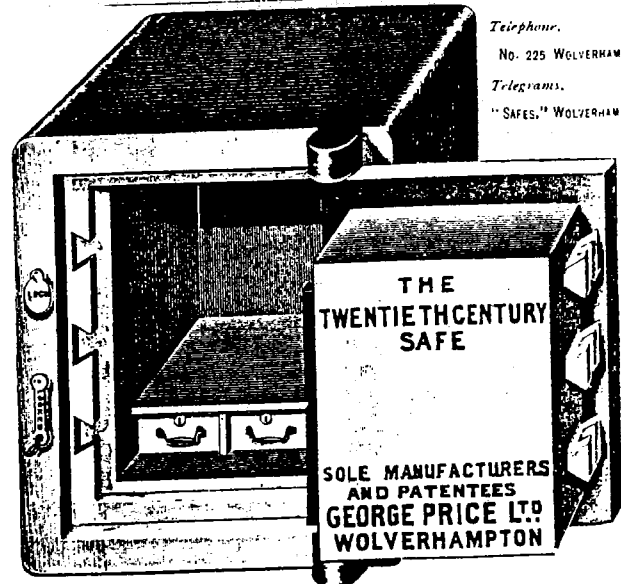
1346

THE IRON

in and out of the lock instead of turning over a pin as in locks of the old type. Looking at the illustration, it will be evident that the body of the shackle when drawn in and locked becomes firmly fastened, so that nothing but the destruction of the lock itself could release the staple from its grasp.

Besides the strength of such a lock, the keyhole is covered to prevent dirt getting in, and the form of the shackle keeps it out from the top. The end of the key pressed into the bottom circle removes the covering, and the key, being solid, cannot get filled with dirt like an ordinary pipe key.

EVERY MAN'S OWN LAWYER, 1901.—ADVERTISEMENTS. xii



BY ROYAL LETTERS PATENT.
"The Twentieth Century Safe."
 BENT-STEEL. LOCKS AT THE SIDE.
 LOCKS AND UNLOCKS AUTOMATICALLY.
 INDICATES WHEN LOCKED AND UNLOCKED.
 Nearly 50% more Fire Proof than the old Style of Safe.
BURGLARS DEFIED AT ALL POINTS.

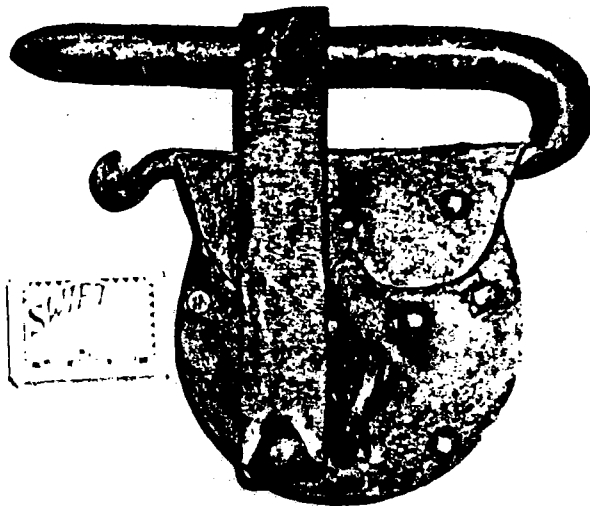
SOLE PATENTEES AND MANUFACTURERS—
GEORGE PRICE, Ltd.,
 WOLVERHAMPTON.
 24, CORPORATION STREET, MANCHESTER.
 LONDON: C. H. GRIFFITHS & SON, 43, CANNON ST. E.C.

Questions from readers

Write in to "Locks & Keys" with your questions about locks. Somebody will surely be able to supply answers. The Editor will be pleased to print a composite answer to questions. When replying, please mention the number of the question.



9] Can anyone give any further information about a brass bar padlock? It measures overall 8" wide and 6 1/2" high; the body is 1 5/8" deep. It has 6 brass



rivets and 3 iron rivets, and a brass key. The mechanism is simple (warded?). It was purchased at a seaport, and apparently arrived with other ship material. (The object shown beside it is a matchbox.)

Jack Segerdahl

10] The advertisement (see p. 8) for 'The Twentieth Century Safe' is dated 1901. How did it work, and has anyone seen one?

10] Peter Hall has one of the Price jamb locks for this safe. Dovetails on the door were originally provided to resist wedging the door and safe body apart. Turning the lower lever (engraved 'LOCKED') a quarter turn anticlockwise raises a vertically



sliding bolt through the slot in the dovetails, and the word then reads horizontally. The lock is a Price *Ne Plus Ultra* safelock, but a latchlock instead of a deadlock. Thus the safe can be locked without a key. Turning the correct key in the lock allows the bolt to drop of its own weight. George Price was taken over by Gibbons soon after this date, who continued for some time to make Price safes, but marked Gibbons. Presumably the name George is underlined to distinguish from Cyrus Price.

Peter Hall

1] Peter Cowie in his answer about the movable bolt-stump mentioned a modern circular lock, used by the MOD. Peter, and Paul Prescott (who has one), have sent more information. It is believed to be called the *Mersey* lock. It has two sets of five levers which are mounted on movable pivots which block retraction of the bolt as soon as tension is applied. The bolt stumps are false notched but fixed. This gives the lock much greater resistance to being opened by the bolt being punched back breaking off the bolt-stumps in the process. The bolt sits above the levers and incorporates a hardened steel plate and a lead plate to prevent the lock's being X-rayed in order to open it. (This must date it to late 1960's or later. *Ed.*) The lock is designed to be impossible to open without doing damage to it. The lock is key retaining and the double-bitted key is offset with one bit at 9 o'clock and the other at 4 o'clock. Thus the key cannot be inserted the wrong way. Some keys are made of separate segments rivetted onto the key pin, and this must make it easier to produce them. No key blanks are available. Paul believes that there is also a change key version, but he has not seen one.

So seriously is loss of a key regarded, according to an informant in Strike Command, that a Court of Enquiry is held.

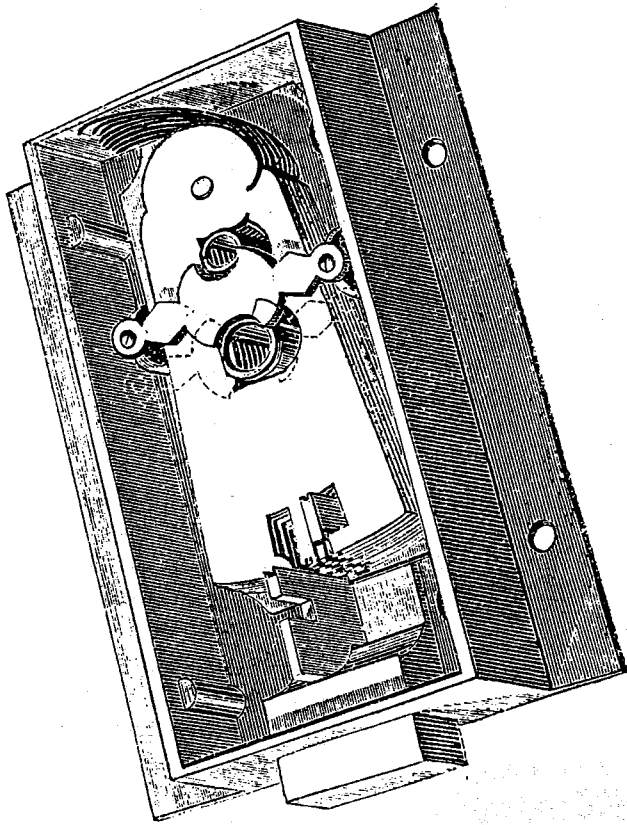
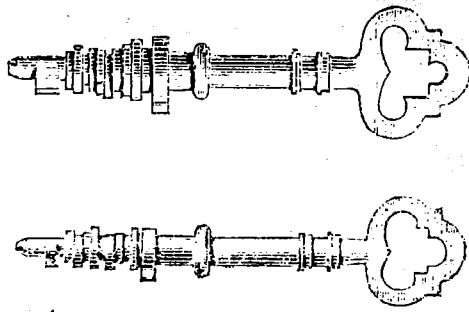
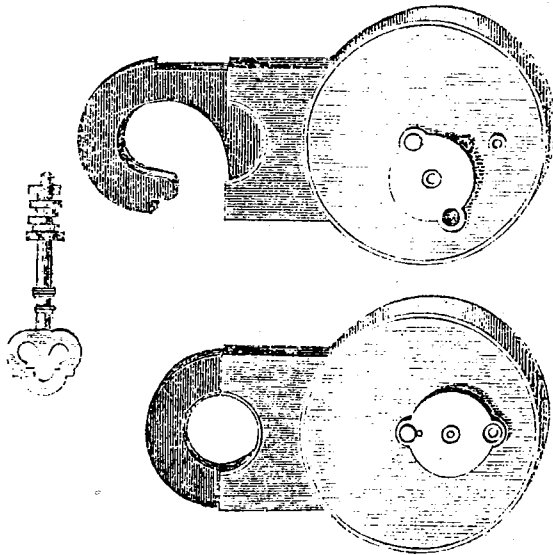
Paul Prescott

Peter Cowie

THE ENGINEER.

Dec. 2, 1870.

COTTERILL'S PATENT LOCKS.



We illustrate in the annexed engraving a street door lock and padlock, the invention of Mr. F. Cotterill, Climax Works, Victoria-street, Birmingham.

The padlock is very substantially made, and, being without a pivoted hinge, could only be forced with great difficulty. The hoop is in one piece with the bolt, and simply slides up and down to open and shut, as shown. The street door lock or latch has two keys; one only need be used during the day; by the aid of the other a cover is thrown over the first keyhole, preventing the insertion of the key, and backing up the tumbler with a strong stop plate to prevent the bolt being forced. This lock is applicable to small safes, office doors, &c. Both locks are very neat and well made, as is a non-tise lock embodying several improvements, which we have not thought it necessary to illustrate.

The keys are of very peculiar form, as will be seen from our engraving. They are spindles with cams cut on them. The following advantages are claimed for these locks:—

1st. The key being a number of eccentric circles, each differing, working in the centre of the tumblers, the lock is perfectly powder proof. Robberies are often committed by copies or impressions of the keys being taken; this is impossible with the Cotterill lock, rendering it admirably adapted for street-door latches, cash-boxes, iron safes, padlocks, dead or rim locks for wine cellars, strong rooms, &c. 2nd. The key working in the centre of the levers gives a great advantage over all other locks, the keys of which work on the edge of the levers, making it very much more difficult to pick or force. 3rd. The keyhole being so small, any instrument inserted for picking fills it up, so that no second

instrument can be inserted which will have the least effect. 4th. The safer street door lock with two keyholes is doubly secure, as it forms two separate and distinct locks; the last or bottom key in locking throws a steel plate over the top keyhole, making it in every way safe from the burglar. Besides, in banks or large jewellery establishments, two clerks may be present, each with his own key to open the safe, yet the lock can be made so that the principal may have a master key to open the two. 5th. The great advantage of the padlock over all others is that the shackle is not fixed to the lock by a pin, but slides in and out of the lock, requiring a key to open it, yet it will lock itself. The keyhole is covered by a spring strap, which requires the point key to open it, so that no dirt can get into it, and wet is kept out of the body of the lock. The locks are made of various sizes, and are of excellent workmanship.

Home safes (moneybanks)

On 2 November 1928 the Scotsman newspaper announced 'it is not unlikely that some of the Scottish joint stock banks will follow a popular feature of the savings bank. This is the 'home bank' which takes the form of a metal receptacle somewhat similar to a children's savings bank which can only be opened by a master (sic) key in the possession office of issue'. Some sixteen days later the paper declared that arrangements had been made for such home banks to be available 'on and after 1 December next at all offices of the Scottish banks'.

How to win customers

The years following the Great War were difficult ones for British banks. The emergence of a few large clearers with London or Edinburgh head offices and large branch networks had changed the character of the industry. The Depression was biting hard, undermining deposits and leading to increasing bad debts. During the 1920's all the banks began to take action to attract small deposits and increase the number of their customers. This was effectively a new initiative as clearing bankers did not then deal in house mortgages, small deposit markets or assurance annuities. They left such business to the building societies.

The Post Office introduced home safes in 1912

The idea of the home safe was borrowed and adapted from British and American savings institutions. The Post Office Savings bank had successfully introduced the home safe in 1912 and Midland Bank appears to have been the first clearing bank to do so, in February 1926. Of the banks which were later to join the Royal Bank Group, Williams Deacon's of London and Manchester launched a home safe scheme in October 1926, the National Bank in 1927 and the Royal Bank of Scotland, National Bank of Scotland and Commercial Bank of Scotland in 1928.

Named and numbered

The first Royal Bank home safes were cast from metal in an oval shape. Each had side slots for the deposit of coins and notes. The lid bore the number of the safe alongside the name of the bank inscribed in gold lettering; some safes also had handles. The

Royal Bank later issued home safes in the shape of a book, with only one slot for coins and notes on the top of the volume. Most were of British make, although suppliers' delays in meeting the early demand and the popularity of American automatic registering banks prompted some of the banks to import models too.

The concept of the home safe, based on simple thrift, was an attractive one at a time of deep recession. Thousands of accounts were opened, often by persons who had had no previous contact with a clearing bank. In January 1929 the Chairman of Williams Deacon's Bank commented on 'the popularity of our home safes, which have evidently come to stay, and proved a definite attraction to the small depositor'.

The bank held the key

Each Royal Bank safe was issued free upon an initial deposit of 5/-. A passbook was also provided in which an entry was made every time the content of the safe was cleared at the bank. Interest was added at the rate of 2.5% per annum from the date of opening the account. The depositor had to take the home safe into the bank since the only key for it was held by the office of issue. It was felt that by this means the customers would put away small sums which they would not consider it worth while visiting a bank to pay in. The accounts were therefore savings accounts.

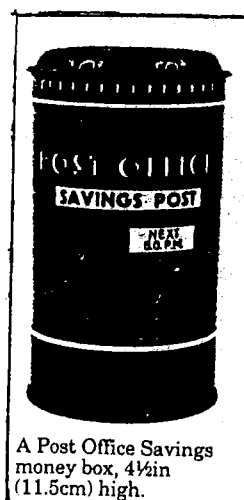
Childrens' accounts

Children too could thus be encouraged in the habit of thrift. Indeed Williams Deacon's Bank took active steps to promote the scheme by sending clerks to talk to groups of youngsters at schools, scout troops and 'boys' brigades, and to empty their safes for them.

Branches also maintained home safe ledgers detailing the number of each safe, and the name of the depositor. If a home safe were lost or damaged by a customer a charge of 5/- was levied. This was waived if the safe were unfit for further use through fair wear and tear. In addition, at least 5/- had to remain in the account whilst the home safe was outstanding.

Shapes and colour

The home safe system continued with very



A Post Office Savings money box, 4½in (11.5cm) high.

Home safes continued from p.11

little alteration until the 1960's, when their place was gradually taken by piggy banks. In 1970 the Royal Bank introduced the large blue piggy bank which was sold for 5/- alongside a smaller piglet in three colours, blue, green or orange. These were issued gratis. In 1974 a football shaped bank was introduced to coincide with the World Cup; they sold for £0.25 each, and were imported from Finland. Later designs included the triangle issued to commemorate Queen Elizabeth II's Silver Jubilee in 1977, the head of the cartoon character 'Top Cat' produced in 1983 and more recently in 1992 the mini-Cashline machine.

Key differs

The early models were more robust than some of the later ones, and there was some variety of keys. Most used 2, or 1, springbolts. Some early locks had levers, but most relied on wards. The great

variety of Finnish moneyboxes, from the 1960's, mostly of plastic, use a standard key. Many moneyboxes have been sold directly to the public, with keys. Thus there are many of this key in circulation. Some books open at one edge; in others, all the 'pages' slide out of the 'cover'. Some bank branches might still be able to find a key to their old home safes, if a pattern is needed. Mergers and name changes of Banks mean there are many different home banks to collect, and several models.

Leather nightsafe deposit pouches with integral lever locks are also being withdrawn by banks. The replacement is a plastic pouch with a pin tumbler padlock.

 The Royal Bank
of Scotland plc

Home Safes

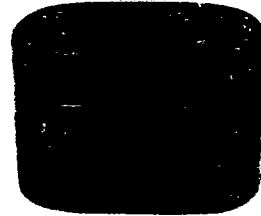
Post Office home safes,
l. Introduced 1930,
c. c1910, r. c1950.
KH



Three home safes, Union
Bank of Manchester,
Coventry Savings Bank
and Northampton Town
and Country Benefit
Building Society, c1925.
KH



Two money boxes,
Birmingham Municipal
Bank and Williams
Deacon's Bank.
KH



A Sheffield and Ecclesall
Co-operative Society Ltd.
home safe, produced from
1900 onwards, 3 1/2 in
(8.5cm) wide.
KH

*These were for you to save
your money for the
Co-operative; they kept
the key and credited the
money to your account.
They had an ingenious
way of preventing people
from picking the lock, i.e.
a panel came across the
money slot to prevent
shaking the money out.*



Two Midland
Bank home
safes, c1925.
KH

*They were issued by
various banks and
building societies,
with half size ones
for children.*