Happy New Year
The Neoteric Strain Of Phreakers For The 90's

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Lockpicking Special Edition

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12-25-1989
Lock-Pick Larceny
By
Alexander Mundy

I hope all of you TAP readers have either made or acquired your lock picks, because I will teach you how to use them.

In order to get started, you will need the following equipment:

1. A pair of tweezers
2. A set of followers

You TAP readers can make a set of followers from brass or plastic round stock or tubing. The important point to remember, is in making the follower, the end must match the plug. When you push the follower through the shell, the top pins and springs should not fall down in between the plug and follower.

3. Rim or Mortice cylinders (stay away from the ones with a curved keyway, like Yale and Lockwood and also the ones with mushroom or spool pins, like Corbin and Russwin.)

These cylinders are harder to pick for the average beginner.

In order to start, remove the tail piece of the cylinder. It is usually held on by two screws or a spring clip. Next, take a follower and remove the plug from the shell. Be careful not to drop any of the pins. Also, when pushing the plug out of the shell, make sure that the key is slightly turned and that the follower is firmly against the plug. Otherwise, you will jam one of the top pins or springs between the plug and the follower as you are pushing out the plug.

Next, remove all the bottom pins, except one. It's position in the plug does not matter. Also, remove all the top pins and springs, except the one that matches the bottom pin. Now reassemble the plug in the shell. Be Careful that the top pin and spring does not fall into any of the unused pin chambers in the plug. Take your turning wrench and pick (you should use a hook pick like this).

Insert your wrench into the cylinder and exert pressure on the plug via the wrench. Next, take your pick and push up the one pin so that it reaches the shear line. The plug will turn in the shell. Congratulations!! You have just picked a one pin cylinder.

For your next experiment, try putting different amounts of pressure on the wrench and feel the difference as you push up the pin. Also, use your wrench in the various positions shown. After you get the feel of picking the one pin, try moving that pin to a different pin chamber. Don't forget about the top pin and spring.

After practicing for awhile, try adding another top and bottom pin and spring to the cylinder and practice some more. Keep picking and also remember the feel you are acquiring. Soon you will be able to work your way up to 5, 6, and 7 pin cylinders.

P.S. While picking a cylinder, you should keep the cylinder steady by placing it in a vice or other suitable holder.
I. Tools

The article describes the design and construction of lock picking tools.

1.1 Pick Shapes

Picks come in several shapes and sizes. Figure 1-1 shows the most common shapes. The handle and tang of a pick are the same for all picks. The handle must be comfortable and the tang must be long enough to avoid bouncing pins unnecessarily. If the tang is too thin, then it will act like a sprig and you will lose the feel of the tip interacting with the pins. The shape of the tip determines how easily the pick passes over the pins and what kind of feedback you get from each pin.

The design of a tip is a compromise between ease of insertion, ease of withdrawal and feel of the intervention. The ball-diamond tip with slender angles in easy to insert and remove, so you can use premise when the pin is moving in either direction. It can quickly pick a lock that has little variance in the length of the key pins. If the ball requires a key that has a deep cut between two shallow cuts, the pick may not be able to push the middle pin down far enough. The ball-diamond pick with deep angles could deal with such a lock, and in general steep angles give you better feedback about the pins. Unfortunately, the steep angles make it harder to move the pick in the lock. A tip that has a shallow front angle and a steep back angle works well for Yale locks.

The ball round tip works well in dead bolt keys. See section 1-2. The full-diamond and full round tips are useful for locks that have pins with the top and bottom of the keyway. The round tip is designed for picking pins one at a time. It can be used to take over the pin, but the pressure can only be applied on the pick to withdraw. The round tip allows you to slowly feel the pin and apply varying amounts of pressure. Some combinations are that it is desired on the top to make it easier to align the pick on the pin. The primary benefit of picking pins one at a time is that you are not straining the hand. Scrubbing slides the entire tip of the pin and the keyway, and spreads metal dust throughout the lock. If you want to avoid leaving traces, you must avoid anything.

The nose tip can be used for something in picking. When scrapping, the multiple bumps generate more noise than a regular pick. The nose tip is particularly good at opening true pin household locks. When a nose tip is used for picking, it can be used on three pins at once. Basically, the nose tip acts like a magnet with a key where both can be adjusted by lifting and lowering the tip, by using it back and forth, and by using either too much or bottom of the tip. You must now moderate to heavy pressure with a nose pick to allow several pins to back at the same time. The nose of a picking force than using a nose and it leaves little evidence.

1.2 Street cleaner bristles

The spring steel bristles used on street cleaners make excellent tools for lock picking. The bristles have the right thickness and width, and they are easy to get into the desired shape. The resulting tools are springy and strong. Section 1.2 describes how to make tools that are good for springing.

The first step is making tools to use off any rust on the bristles. Clean the rust with lemon water or just soap and water. If the edge of the bristles are worn down, use a file to make them square.

A street cleaner has a bend and a handle as shown in figure 1-2. The bend is about 1/2 to 1/4 of an inch and the handle range from 2 to 3 inches long. The head and the handle are separated by a bend that is about 90 degrees. The head must be long enough to reach over any protrusions such as a grip-guard Miller) and firmly engage the pick. A long handle allows greater precision over the tower, but it is long enough, it will bump against the doorframe. The handle, head and head angle can be made quite small if you want to make tools that are easy to conceal (e.g., as a pen, flashlight, or belt buckle). Some street cleaner have a 90 degree twist in the handle. The width is about 1 inch wide till the bend and the desired angle. A general purpose wrench can be made by increasing the tip (about 1/4 inch) of the head. The tip for small keyways while the rest of the head wide enough to grab a normal keyway.

The head part of a turning wrench is bending the handle without touching it. To make the 90-degree handle bend, clamp the bend of the handle (about 1 inch) in a vise and use a plane to plane the handle about 3/8 of an inch above the vise. You can use another part of plane instead of a vise. Apply a 45-degree angle. Try to keep the two part of the town line up with the use of the brace. Now move the plane back another 3/4 inch and apply the remaining 45 degrees. You will need to twist the bend more than 90 degrees in order to get a permanent 90 degree bend.

To make the 90 degree head bend, lift the handle out of the vise and about 1/4 inch (for 3/4 inch will work in the same way). Place the sheet of a delicate against the handles and bend the spring steel around it about 90 degrees. This should set a permanent 90 degree bend in the metal. Try to keep the one of the handle perpendicular to the handle. The paragon耐用 amount shows that the radius of curvature will be not be small. Small curved object will (e.g., drill bit, needle some pins, or a pen cap). If you have trouble with this method, try grinding the handle with two passes separated by about 1/2 inch wide. The method produces a gentle curve that will bend the handle.

A grinding wheel will greatly speed the job of making a pick. It takes a bit of practice to learn how to make smooth cuts with a grinding wheel, but it takes less time to practice and make two or three parts than it does to head in a single part. The first step is to remove the front angle of the pick. Use the coarse of the wheel to do so. Hold the handle at an angle to the wheel and move the handle side to side, as you grind away the metal. Grind slowly to avoid overheating the metal, which makes it brittle. If the metal changes color (to dark blue), you have overheated it, and you should grind away the scored portion. Next, cut the back angle of the top using the mirror of the wheel. Usually one mass a sharper than the other, and you should use the one. Hold the pick at the desired angle and slowly push in the rotation of the wheel. The angle of the back should be cut back. Be sure that the top of the top is sharpened. If the grinding wheel is too fast, then the top will move to hold the top. The cut should be done using about 1/3 to 1/2 of the width of the back of the handle. If the top comes off, continue. Otherwise break it off and try again. You can break the handle by clamping it in a vise and bending it sharply.

The curves of the wheel is also capable of cutting. The curve of a wheel to reduce how the back of the handle should go. The top should be long enough to allow the tool to turn the back of the pin out of a key. Cut the top by making several smooth passes across the surface. Each pass starts at the top and moves to the back of the pick. Try to remove less than 1/16th of an inch of metal with each pass. I use two fingers to hold the handle on the step of the proper angle while my other hand pushes the handle of the pick to move the angle along the curve. The whatever technique works best for you.

Use the hard face of the pick. It should feel smooth if you can use a finger and feel it. Any roughness will add noise to the feedback you want to get from the lock.

The outer edge of the plane can be used to handle a pick. However there or four of a turn from a length of cable and push a over the pick. If the sheath won't stay in place, you can put some string on the handle before pushing the sheath over it.

1.3 Bicycle spokes

An alternative to making tools out of street cleaner bristles is to make them out of bicycle spokes. These materials are easily accessible and when they are hot twisted, they will be stronger than nails made from bristles.

A strong turner wrench can be constructed from an 8-point wheel (about 1 inch diameter). First heat up the pins with a propane torch until glowing red, then remove it from the flame, and let it cool, the fletch it. The hole of a gauge wheel can be used instead of a wheel. Crick it down into the shaft of a sawn arrowhead blade and heat it to 80 degrees. The head should be about 1 inch to 4 inches because some bolt faces are scored. Place it on a rack (as described) and you want the head of the wrench to be able to reach about half an inch into the play. Temper (harden) the turner wrench by heating to bright orange and dunking it into water. You will need to use a virtually undetectable heat source that will last for years under normal use.

Bicycle spokes make excellent picks. Bend the end of the shape you want and file off the bend of the bicycle and file to the horizontal direction. Try a right-angle bend about half an inch for a handle. For smaller picks, which you need for key cutting, the picks will be large-diameter springs and wide head. If you're careful you don't have to play any complicated games.

1.4 Brick Strap

For perfectly accurate key blanks that you can't otherwise find at the store, use the metal strap they wrap around locks for locking. It's wonderfully handy stuff for just about anything you want to manufacture. To get around metal or in brick, you can bend the strap longwise by bending it in a vise and then on the protruding part to bend the piece to the rounded angle.

Key straps are very hard. It can take a grinding wheel or key cutting machine. A hard line at the recommended line for grinding lock tools.

Diagrams next page.
In this article, I will attempt to bestow upon the reader an additional piece of infinitesimal wisdom in the realm of technological knowledge. I trust all of you TAP readers have been practicing your lock picking, because I will dis close in this article the method of picking a cylinder (lock) with mushroom drivers. A mushroom driver looks like the following, also illustrated is a spool driver. Both of these top pins perform the same function.

**Mushroom Driver**

**Spool Driver**

Corbin, Ruswin, Abus, Walsaco, and American are some of the locks that contain mushroom pins. The Fox Police Lock Co. also uses a Ruswin rim cylinder in its' lock products.

Now on to the technique. When one is confronted with a lock of this nature, one should pick the lock by first finding the bottom pin with the regular driver. There is usually only one regular top pin in a lock that contains mushroom drivers. But, the possibility exists that there may be more than one regular driver. While applying tension on the tension wrench, one picks the pins in the lock until one picks the one bottom pin with the regular driver. While the bottom pin with the regular driver reaches the shear line in the lock, the plug will turn a fraction of a degree. At this point, one know that you will have to pick the remaining bottom pins with the mushroom drivers. To push the bottom pin up to the shear line, one will have to gradually release tension on the tension wrench as you are pushing up on the bottom pin. As you are pushing up on the bottom pin, you will feel the plug begin to lose that fraction of a degree to which the plug was turned. When the bottom pin has reached the shear line, the plug will again turn a fraction of a degree. This will continue until all of the mushroom pins have been picked. At this time, the plug will be free to turn in the direction in which you have applied tension via the wrench.

One exception to this is two types of fairly new drivers which look as follows:

One should note the bottom lip of the pins

One would pick these in the same manner. But, before the lock will open, one will have to release almost all tension on the wrench. This is because the bottom lip of the top pin is still in the plug preventing the lock from opening. While having almost no tension on the wrench, one will have to pick each bottom pin just a fraction more in order for the bottom pins to reach the shear line.

GOOD LUCK AND KEEP ON TRYING!!!!!!!!!!!!!!!!!!!!!!
Many of the combination locks on the market today can be opened with a simple tool made from a piece of .005" spring steel that is gotten from an automotive feeler gauge.

Any lock that has multiple combination wheels is openable by their method. The most notable brand is the Sesames combination lock.

To make the pick out a piece of .005" steel to fit the pattern shown.

The steel should be heat treated a bit on the brittle side so that the feelers will not become flat during use.

To use insert the feeler between the combination wheel and the lock wall and turn the wheel until you find a notch in the side of the wheel. Do this to all the wheels. Now subtract or add 5 to the numbers you got. Now turn the wheels so that the resulting numbers face the trademark logo on the front of the lock.

This method can be varied to open multi-wheel combination locks.

The Stainless Steel Rat

![](image)

PICKING THE LOCK

To make a key for a rollersmith lock, take a 2" nail, size 8D or slightly larger, and bend up the tip a little as shown. You may have to tap it with a hammer to insert it a full inch and an eighth. Then use the bent tip to hook one of the rings inside. Pull the nail out very slowly and powerfully with a big pliers or visegrips. The spring in the lock is very hard and it will slip out a few times before you get it, but when it does the lock will open up. If you can't get it, just get a hack saw and cut the ring.

X-Ray View of Lock

Spring

Locking Balls

Pliers

Ring

Pull

Nail (Actual Size)

Bend

Make a Key for Your Rollersmith Lock

One of our master crafts persons just built this beautiful rollersmith key and it works like a dream. Unlike the nail method in TAP 23, this key allows you to put the lock back on! (As well as take it off, of course). You'll need an electric grinding wheel and two 5/32" diameter nails... that are at least 3" long. Since the hole when the top nail is slid forward as shown in the diagram. Bend the backs of the nails so that there's a 1/8" space between them yet they lie flat against each other along their length. It's easy to see that when you tilt the handle forward the tip of the key expands and grabs the moving cylinder in the lock. Now pull the key outwards while keeping the top of the handle tilted forward, and voila! off it comes.

Drill the holes in the nails for the pivot screws and mount it in between two pieces of wood for a handle. You can put a rubber band around so they don't flop around when not in use.

We smashed open a lock to find that it is built a little differently then we pictured in Issue 23. The spring is in the middle and there's no lip for a nail to grab.

PICKING TOOLS

RAKE

BALL

DIAMOND

HOOK

All picks shown are reduced from actual size.
Actual size/shape of a small, but adequate, pick set.

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