



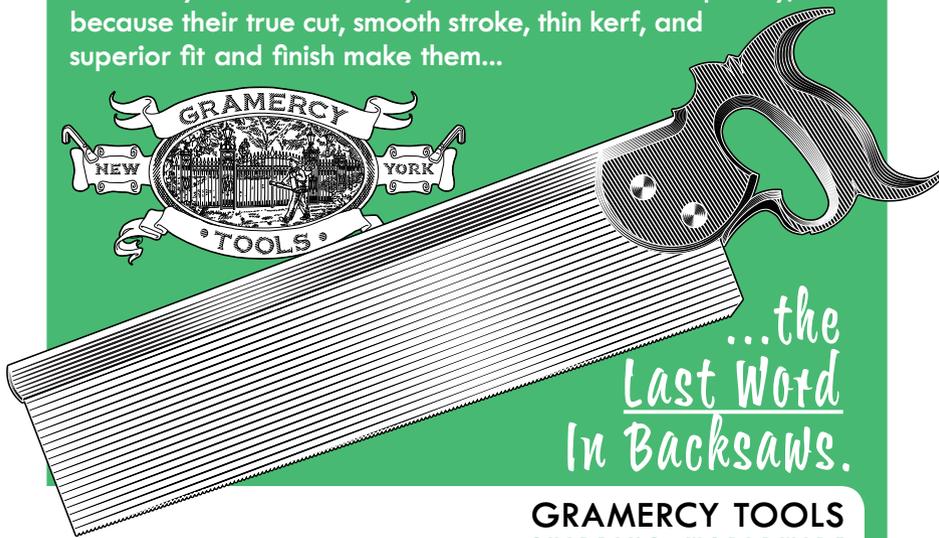
Modern Edge Tools

toolsforworkingwood.com

Modern Edge Tools

CHOOSING CHISELS	4
MORTISE LIKE MOXON	7
PLANE SPOTTING	8
CARVING SWEEPS	10
GET STARTED CARVING	12
A VISIT TO ASHLEY ILES.....	13
JOURNEY INTO STEEL.....	15
MAINTAINING A CARD SCRAPER.....	16
SHARPENING	18

Gramercy Tools Saws are your **FIRST CHOICE** for joinery, because their true cut, smooth stroke, thin kerf, and superior fit and finish make them...



...the
Last Word
In Backsaws.

GRAMERCY TOOLS
SHIPPING WORLDWIDE
32 Thirty Third St. Brooklyn, New York 11232

Thank You: Barry and Tony Iles, Ray Iles, Alan Reid and Clico, Uwe Niggemeier at www.stahlseite.de, Kris Pastuszka, Chrystil George, Quinn Taylor, Kylie White, and Halley Bondy. Furniture illustrations courtesy Carlyle Lynch Plans.

Modern Edge Tools is a product of the Design Department at Gramercy Tools.
Written, Designed, and Illustrated by Timothy Corbett & Benjamin Seltzer.
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STEEL

The Lighter, Stronger,
Longer Lasting metal.

Illustration: Timothy Corbett. Source photography: © Uwe Niggemeier www.stahlseite.de

Much as primitive woman harnessed fire, today's scientists have conquered the elements and are now producing new and amazing materials with ATOMIC precision. Chief amongst these new laboratory wonders is STEEL.

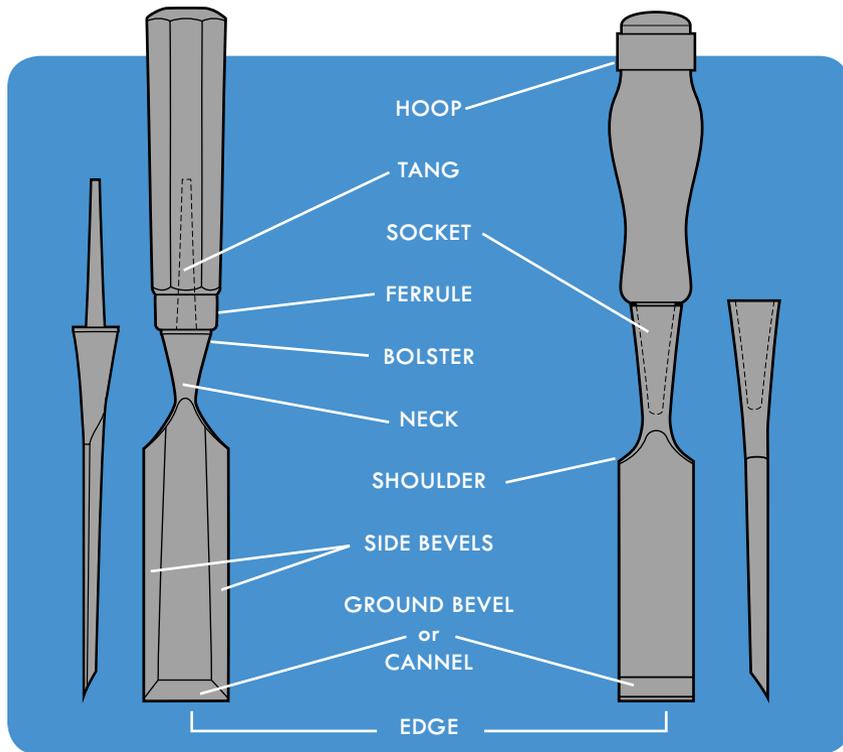
It is from nature's greatest gift, IRON ORE, that steel is born. Loaded by the ton into gigantic furnaces, ore is heated with limestone, coke, and air to form IRON...

In a dramatic display, a scientifically controlled blast of SUPERSONIC oxygen strips the IRON of excess carbon. Alloying elements are added, and the molten STEEL is cast into ingots before being formed into the bone and sinew of our industrial world.

The future is now when you choose STEEL!

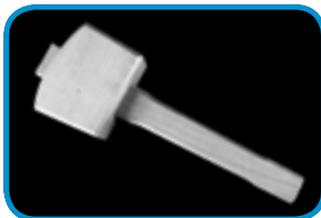
CHOOSING CHISELS...

THE BENCH CHISEL is the most fundamental EDGE TOOL of the cabinetmaker or woodworker. Selecting a chisel, whether your first or fortieth, is a task made more difficult by the abundance of chisels available to today's modern woodworker. This guide is aimed at both the professional and amateur seeking to maximise the value of their dollar by purchasing quality tools in useful sizes. The right tool for the job is economical for both the wallet and watch.



These wooden handled workhorses are typically 8-12" in length over all, and sold by width. Use the widest tool that will fit your work, as it will naturally give a cleaner surface. A blade with narrow edges slips between dovetails or into narrow mortises without damaging your workpiece. The back of the blade must be flat or slightly hollow. Typically these mechanical mainstays are sharpened with a 25° to 30° bevel angle (although some alloys of steel require a steeper angle) for a mix of durability and sharpness.

MALLETING—The ENGLISH CARPENTER'S MALLET is a simply constructed tool for striking chisels and gouges. The mallet should be made of wood softer than your chisel handle, so that it may deform before the chisel is damaged. Some carvers prefer round rubber mallets, and these can do well in situations needing precision, however for tasks like mortising, choose a carpenter's mallet.



www.toolsforworkingwood.com/met

...FOR COMFORT AND VALUE

SIZING AND PURCHASING— When selecting tools for maximum value it is important to remember that the oft-used tool is always the "best deal." Begin by purchasing a few sizes from a reputable dealer, and put them to good use. Let the experience gained inform your subsequent purchases, for nothing can substitute for hands-on experience as far as comfort and preference are concerned. Choose one or two smaller sizes like 1/4", 3/8", or 1/2" for use in tight spots such as between dovetails. Additionally, pick at least one big chisel. 7/8" or wider will answer for shaping larger features on joints or setting hinges.



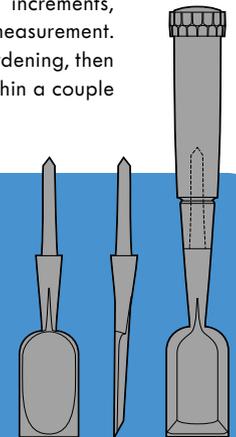
A PARING CHISEL is never struck with a mallet. Instead it is pushed through the wood to "pare" away thin slices. Favored by patternmakers, woodworkers of all stripes find them useful for precision fitting of joinery and delicate work. Some varieties, often called "paring slicks" have offset handles for clearance when smoothing flat surfaces longer than the length of the blade. Paring chisels are sharpened at very low angles (20° to 25° is common).



The SKEW is a special chisel used for getting into corners where a bench chisel will not fit. Narrow sizes are most useful. Do not confuse the skew chisel with the skewed blade of the #2 sweep carving tool. The carving tool has, more commonly, a double bevel, while the skew is single beveled, and available in right and left handed versions for maximum clearance.

NOMINAL SIZES: Chisels are traditionally sold in 1/16" increments, however this NOMINAL SIZE should not be taken as an exact measurement. Traditionally manufactured chisels are forged to size before hardening, then "Ground Bright" after tempering. Chisels typically measure within a couple of hundredths of an inch above or below their nominal size.

A word on JAPANESE CHISELS and STEEL HAMMERS should be said, as they are the exception to the rule; wooden handled tools should only be struck with non-metallic mallets. The handle of a Japanese chisel is topped by a steel ring, called a hoop. The hoop must be set, and the top of the chisel mushroomed over. In this way the chisel handle is protected from splitting, and may be struck with a steel hammer, as per the Japanese tradition.

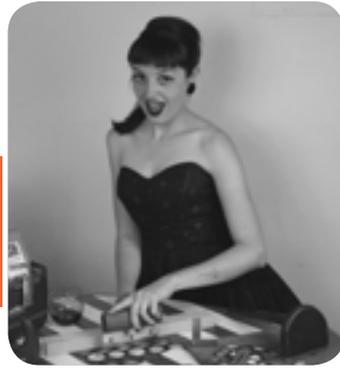


www.toolsforworkingwood.com/met

SAW

VENEER

IN YOUR SPARE TIME



USE VENEER FOR PROJECTS LIKE THESE



As we prepare for the computer age and the two day work-week, the question on every man, woman, and child's mind must certainly be, "Am I prepared for the five-day weekend?"

The answer is yes, when you SAW VENEER with the Gramercy Veneer Saw!!

Sawing Veneer is fun for the whole family and a great way to fill a weekend, no matter how long!! Whether your veneer is machine sliced or the old-fashioned hand sawn variety, there's a Gramercy Veneer saw and blade to suit every task.

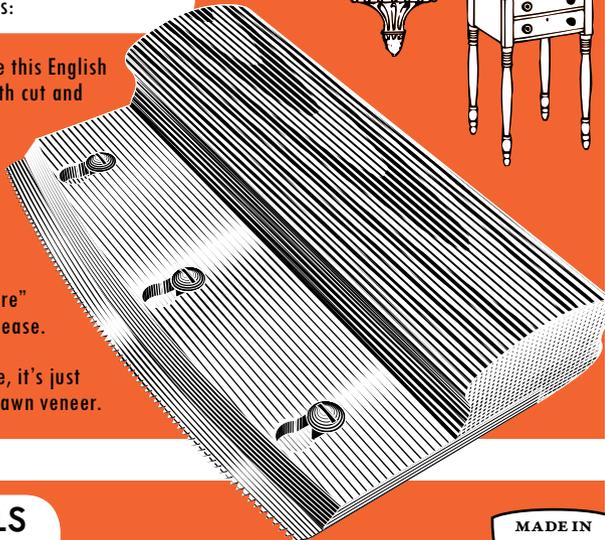
Try all four interchangeable blades:

15-60— Care for a pint? You'll love this English pattern veneer saw blade's smooth cut and symmetrical teeth.

15-60/60— This fashionable French style blade brings the continent to your cabinetry projects!

15-90— This "blade of the future" cuts the most difficult veneer with ease.

King Kong— A monster of a blade, it's just the ticket for your thickest, hand sawn veneer.



GRAMERCY TOOLS

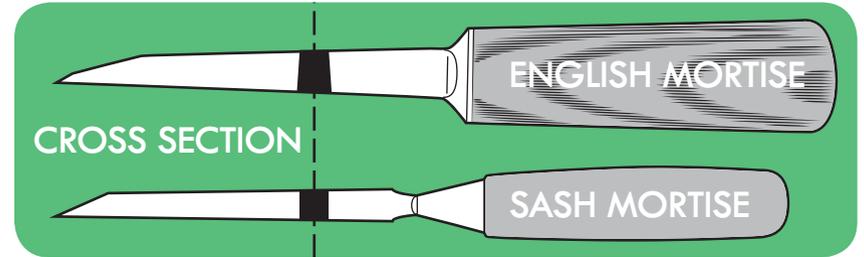
SHIPPING WORLDWIDE

32 Thirty Third St. Brooklyn, New York 11232

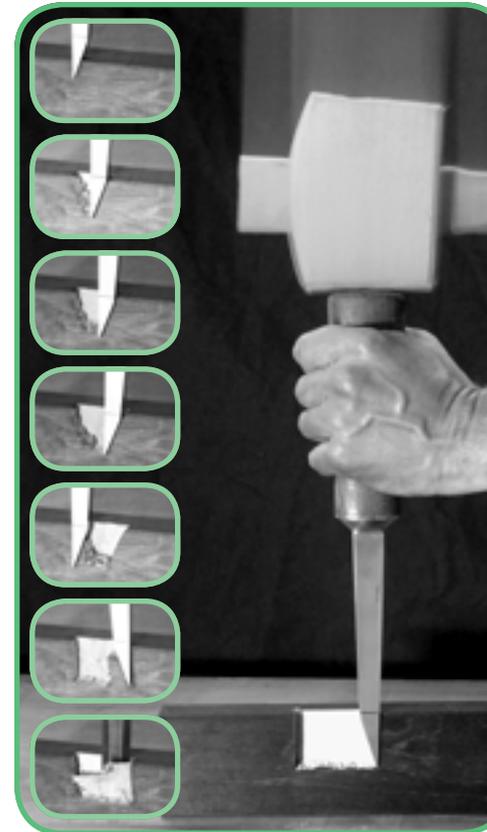


MORTISE LIKE MOXON

Adapted from Moxon's Mechanick Exercises, published in 1678— First, choose a quality ENGLISH MORTISE CHISEL. The daintier, Sash Mortise, will not do; it's only for shallow work in the softwoods common to window sashes. An English Mortise Chisel boasts a stout blade with TAPERED SIDES to prevent sticking, a ROBUST HANDLE to withstand heavy blows, and a steep SECONDARY BEVEL to strengthen the cutting edge.



Hand chopp'd mortises add value and satisfaction, but they needn't add excess labor or poor joints. Follow these simple steps, and in no time flat your shop will be filled with the echoing "WHACK!" of the mallet, and the gratifying "SHHHWIP!" of airtight joinery.



1. Lay out your mortise with a scribe & mortise gauge. Note the width, then select a mortise chisel that is slightly undersized. Mark the intended depth of your mortise on the chisel with marker or tape. Clamp the workpiece firmly.

2. Set the chisel, 1/8" inside your marks, bevel in, and drive the chisel straight down as deep as it wishes to go. Free the chisel by levering the handle front to back.

3. Set the chisel forward of your previous chop, and again drive it as deep as possible, then lever out the waste. Repeat the process until you have chopp'd to within 1/8" of the opposite mark

4. To finish the job, place the chisel, bevel in, at your scribe line and drive the chisel straight down to form the vertical ends of the mortise. Do this for both ends of the mortise.

5. Bring the mortise to full width with a wide paring chisel. Set it on the gauge lines, and press straight down. Congratulations on a job well done!!

PLANE SPOTTING

Is The Responsibility Of Every Citizen.

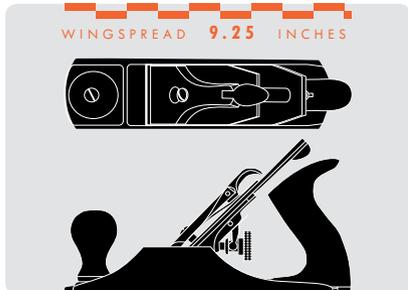
Hand planes are a necessity in any woodshop. Having proven their utility over two centuries, they are set to remain an important tool even as we transition to the fully MECHANIZED WORKSHOP OF TOMORROW. It is, therefore, the sworn duty of every woman, man, and child to cultivate a working knowledge of this PARAGON OF PRECISION.

Let knowledge be your weapon, and the perfect shaving your goal, as we prepare to quickly, and at a moment's notice identify BASIC HAND PLANES.



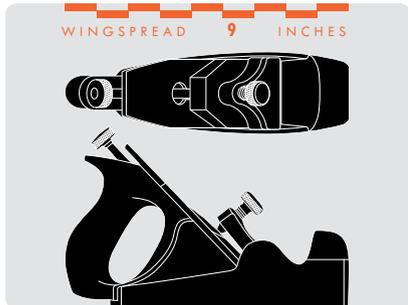
WINGSPREAD 9.25 INCHES

CLIFTON No. 3 SMOOTH PLANE



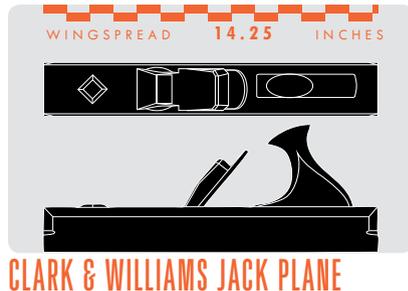
WINGSPREAD 9.25 INCHES

BEDROCK No. 604 SMOOTH PLANE



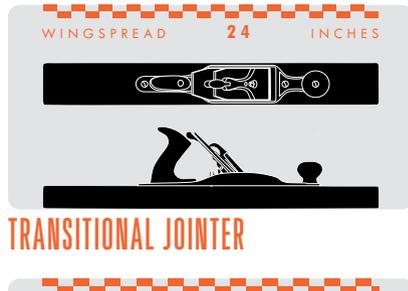
WINGSPREAD 9 INCHES

NORRIS No. A5 COFFIN SMOOTHER



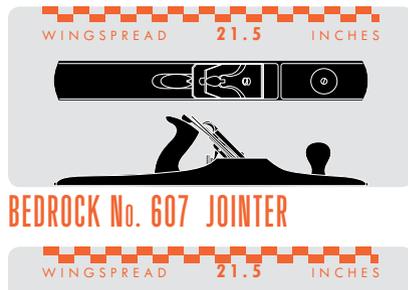
WINGSPREAD 14.25 INCHES

CLARK & WILLIAMS JACK PLANE



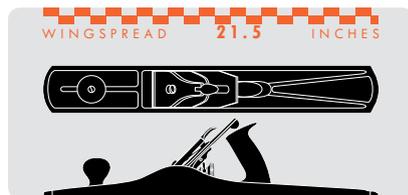
WINGSPREAD 24 INCHES

TRANSITIONAL JOINTER



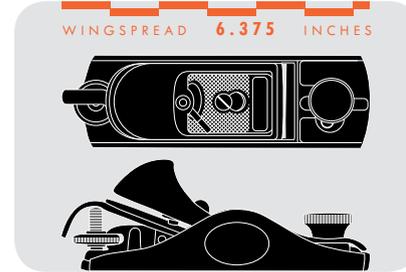
WINGSPREAD 21.5 INCHES

BEDROCK No. 607 JOINTER



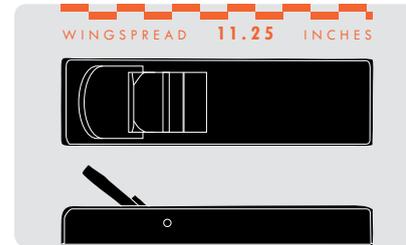
WINGSPREAD 21.5 INCHES

CLIFTON No. 7 JOINTER



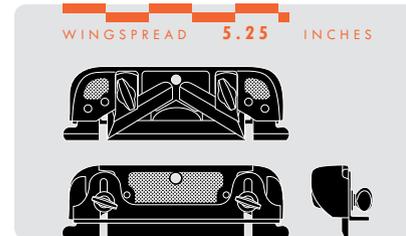
WINGSPREAD 6.375 INCHES

STANLEY COPY BLOCK PLANE



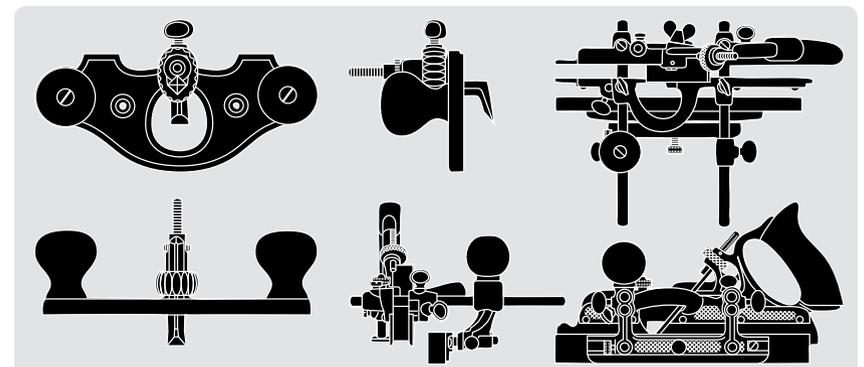
WINGSPREAD 11.25 INCHES

TSUNESABURO SMOOTH PLANE



WINGSPREAD 5.25 INCHES

STANLEY No. 79 SIDE RABBET



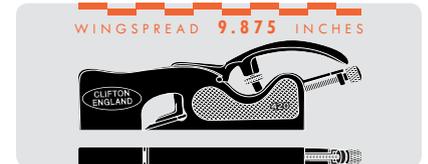
WINGSPREAD 8 INCHES

STANLEY No. 71-1/2 ROUTER



WINGSPREAD VARIABLE

CLIFTON No. 3110 THREE-IN-ONE



WINGSPREAD 9.875 INCHES

CLIFTON No. 420 SHOULDER PLANE



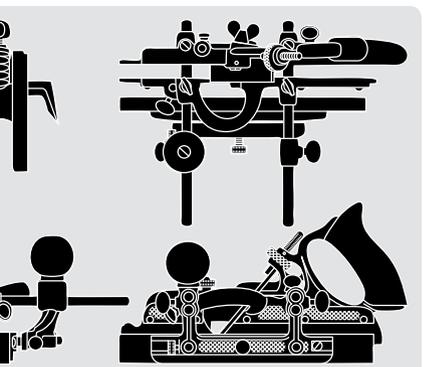
WINGSPREAD 9.375 INCHES

HOLTZAPFFEL MOVING FILLETSTER



WINGSPREAD 10.25 INCHES

NORRIS No. 7 INFILL SHOULDER



WINGSPREAD 10.5 INCHES

STANLEY No. 45 COMBINATION PLANE

Carving Sweeps

The curvature of a gouge is called its "sweep" and is denoted by a number, whose significance is largely arbitrary but useful to the carver wishing to identify which tool to purchase. English and Continental sweeps are not standardized. This chart represents the **ENGLISH SYSTEM** used today by Ashley Iles, Henry Taylor, and other firms.

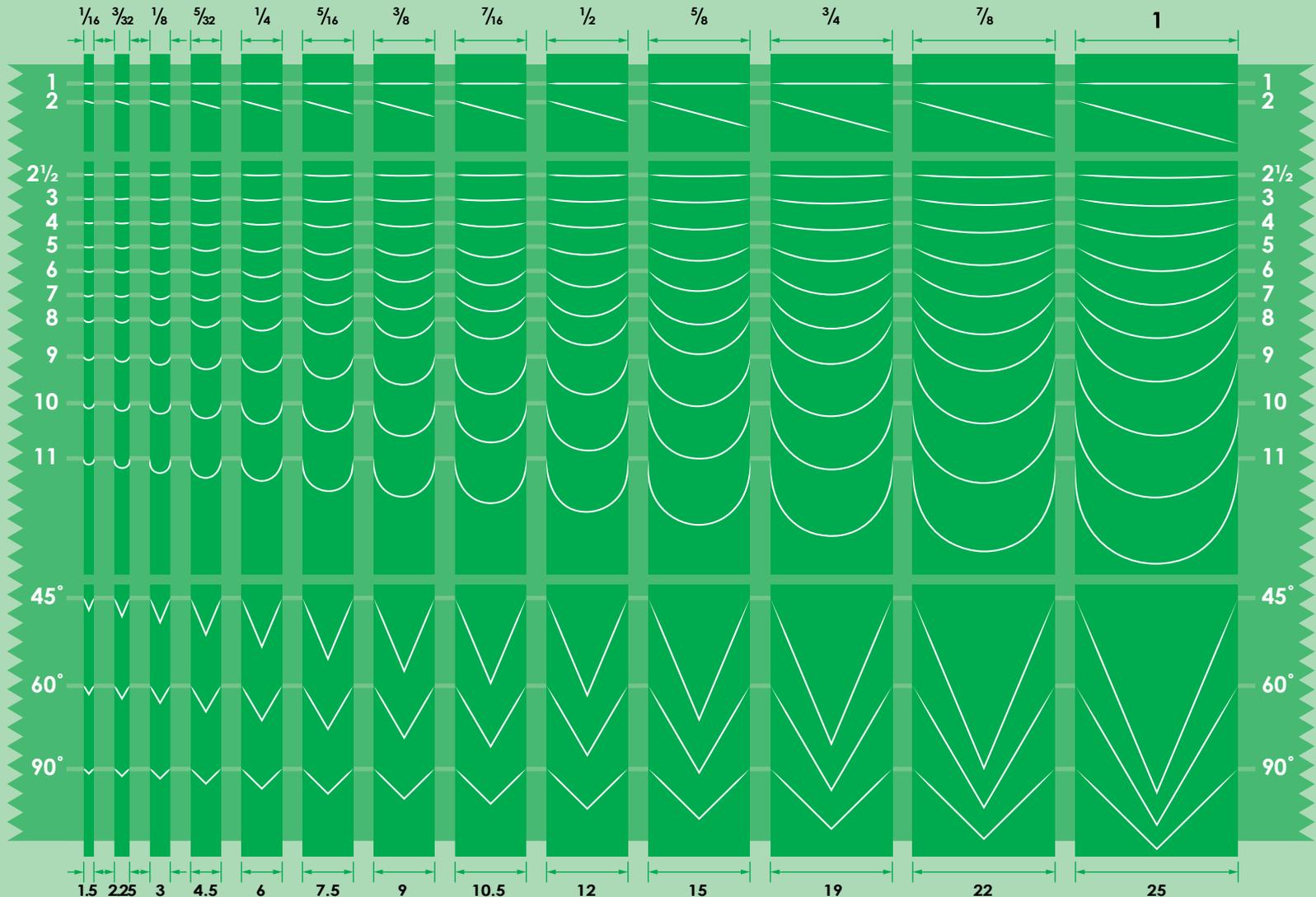


Sweep 1 is a **STRAIGHT CHISEL**, with its edge perpendicular to the run of the shank. Sweep 2 is also straight but ground at an angle, and called a **SKEW** or **CORNER CHISEL**.

Sweeps 2 1/2 through 11 are **GOUGES**. Higher numbers correspond to tighter curvatures, although there is no mathematical relationship between the number and the curve of the tool. As you can see, a 2 1/2 gouge is nearly flat, while an 11 is "U" shaped.

"V" TOOLS are described using the included angle of their two cutting edges. 60°, 45°, and 90° are common.

Carving tools are measured tip to tip straight across the span of the gouge. Because quality carving tools are ground by hand after forging and hardening, they will typically measure a couple hundredths of an inch below or above their **NOMINAL SIZE**.



GET STARTED CARVING

Starting out at carving can be a puzzle. You can't carve without tools, but you won't really know which ones you want without some experience. So, rather than attempting to buy carving tools for every circumstance, purchase for the job at hand. **BEGINNING WITH A PROJECT** ensures your money is spent on tools that will see good use. With that in mind, let's take a look at the initial steps for a simple relief carving project...

Naturally, you'll need a design. This Art Nouveau flower, inspired by Alphonse Mucha, will provide the perfect example of how easy it is to get started carving; using only four carving tools!!

Ashley Iles #39
3/8" 60° V-Tool

First, trace around the design, aiming for a consistent cut as deep as you wish to relieve the background. This is called **LINING IN**.

Ashley Iles #2-1/2
1/2" Gouge

Last, level the background. Go right up to the lines cut by the skew. This is **GROUNDING**.

Ashley Iles #2
1/2" Skew

When wasting is done, trace the design again, this time with a skew chisel held vertically. This is called **SETTING IN**, and helps to define the flower against the background.

Ashley Iles #7
1/2" Gouge

After lining in, **WASTE AWAY** the background with a series of parallel gouge strokes.

Now that you've laid the foundation, you can stop here or continue sculpting. The petals and leaves can be modeled with the gouges, or simply traced and textured with the V-tool. Voilà! Une belle fleur!

PRO TIP: Store full-size carving tools in a tool roll, handle first. That is, put the handles in the pockets. With the tips of the tools sticking out, you'll be able to identify any of your collection at a glance, at the same time keeping them safely and neatly packed for transport.

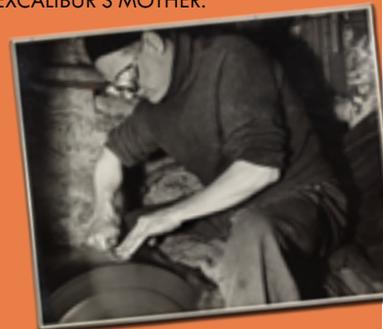
GEE WIZ WHAT A CARVING! Download our Art Nouveau Flower Template and get started today! **FREE** online at:
www.toolsforworkingwood.com/getstartedcarving

A Visit to ASHLEY ILES Ltd. England, U.K.

A short walk south of East Kirkby in Lincolnshire, off a gravel lane, stands a living reminder of the industry and ingenuity of English tool manufacture. Visiting the works is a journey through tradition. Although Ashley passed away some years ago, his sons Barry and Tony still own and operate the works— master tool makers in their own right.



ASHLEY'S ANVIL is the centerpiece of the works. Still in use, this **TRADITIONAL TOOL** manufacture stands proudly set into stone, as though it were **EXCALIBUR'S MOTHER**.



HAMMER FORGING imparts a durable edge at the cost of requiring exceptionally skilled craftsmen.



Each tool must be **DEAD STRAIGHT**. The subtle dishing of **ASHLEY'S ANVIL**, worn by nearly a century of continuous use, aids the craftsman in forming and straightening. Once, a well intentioned visitor offered to grind the worn anvil surface flat... he was kindly shown the exit.



TONY ILES Grinds the inside of a gouge on a felt wheel coated in glue and rolled in abrasive. The technique echoes early methods that used fish glue.



Like his father before him, Tony keeps his **NOSE** to the **GRIND STONE**, never mind that its **SURFACE SPEED** can run in excess of **90 MILES** per HOUR.

Want to learn more about traditional tool manufacture in England? Watch the videos from our recent visit to Ashley Iles.

Online Exclusively at: www.toolsforworkingwood.com/video

Tool Tips

on rasps and rifflers

HOW TO KEEP YOUR CUTS SMOOTH

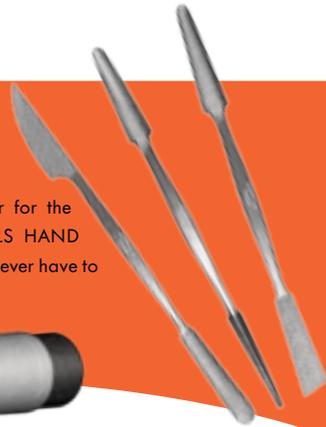


Start with a high quality GRAMERCY HAND PUNCHED RASP. Because Gramercy Rasps are HAND PUNCHED, their teeth will far outperform any machine-made rasp. Their superior quality is due to the slightly random spacing of hand punched teeth, which prevent each tooth from following the cut of the tooth in front.

Getting TOP NOTCH performance from your GRAMERCY RASP is easy - Secure your workpiece and rasp "uphill" with the grain, while gripping the rasp by its handle and tip. Rasping "downhill" catches the ends of the wood fibers, resulting in a rough cut, and poor finish.

RIFFLERS GET INTO TIGHT SPOTS

Tight clearances, and even tighter tolerances are par for the course when working small-scale. GRAMERCY TOOLS HAND PUNCHED RIFFLERS come in a set of three, so you won't ever have to wonder "Do I have the right tool for the job?"



HOW TO MAKE THEM LAST AND LAST



Choosing a GRAMERCY HAND PUNCHED RASP says "I know Value when I see it!" That's why Gramercy Rasps come in REUSABLE PROTECTIVE TUBES. Only use bristle brushes to clean the teeth.

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JOURNEY INTO STEEL

Edge tool makers use a process called heat treatment to give their tools the edge retention, hardness, and durability we expect from the CUTTING EDGE. This process is only possible because of the AMAZING STRENGTH carbon gives to crystalline IRON at the ATOMIC level. We will discover how as we... JOURNEY INTO STEEL!



To the naked eye, steel appears to be homogeneous. Under magnification we see a grain pattern of IRON CRYSTALS called FERRITE, bordered by carbon rich IRON CARBIDE (Fe_3C) also known as CEMENTITE.

Steel in this state is soft. In order to strengthen the STEEL the carbon must be spread throughout the iron.

Heated to 1000° KELVIN the grains of Ferrite CHANGE PHASE. The atoms rearrange forming AUSTENITE, which freely absorbs carbon from the dissolving cementite.

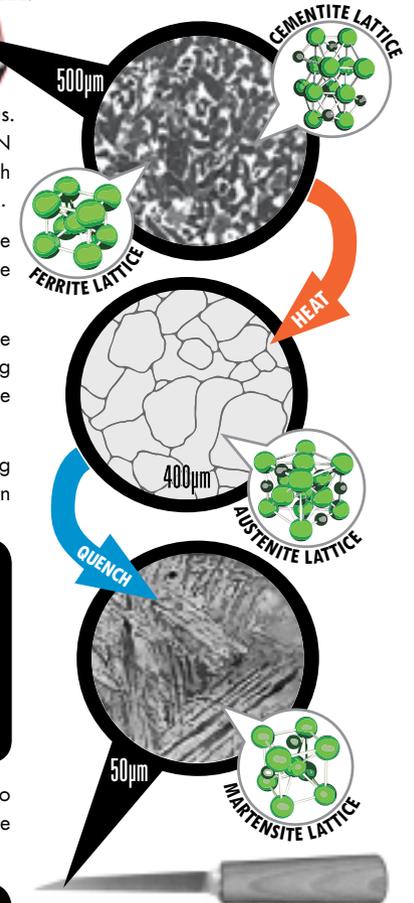
The tool is plunged into a bath of brine or oil, cooling it quickly and trapping carbon atoms within the iron lattice. The result is called MARTENSITE.



Martensite is exceptionally hard but very brittle. To make a tool that will not shatter, the steel must be heated again in a process called TEMPERING.



Hardness testing with a Rockwell Machine



Gently reheating the martensite (around 200°C) releases small amounts of carbon, improving the tool's toughness. Properly tempered edge tools are typically around 58 to 65 on the Rockwell Hardness Scale.

Just as the engineer adds cross bracing to a building or bridge, the tool maker uses flame to reinforce IRON with CARBON, transforming, steel into a stunning array of EDGE TOOLS.

SHARP SCRAPERS MAKE SHAVINGS

Keeping your scrapers sharp is a breeze. Just follow this simple how-to and remember:

SHARP SCRAPERS MAKE SHAVINGS, NOT DUST.



Begin by filing the edges of the scraper true and straight. Hold the file with two hands and pull it towards you with the tang facing away from you. Use even strokes until the edge is free of dents, nicks, and low spots.

Polish the squared edge on an Arkansas stone or other fine, flat abrasive. Maintain the blade at 90°, use steady pressure, and a bit of oil on the stone. When the edge is square and polished it is ready to be turned into a burr.



Set the scraper flat on the edge of a sturdy surface, and add a few drops of oil to the burnisher. Holding the burnisher at between 5° and 15° press down and rub hard. This step subtly deforms the edge into a "dog ear" shape.

Clamp the scraper in a vise and add a few more drops of oil to the burnisher. Hold the scraper at a 15° angle and apply steady pressure while rubbing it back and forth along the edge. This step folds over the burr we formed in the previous step, producing the cutting edge.



Run your finger across (NEVER ALONG) the edge. You should feel a pronounced but small burr which is, in fact, the sharpened edge, ready for use.



No wonder they're called
"miracle holdfasts"!!

GRAMERCY
HOLDFASTS
Steel Construction Lasts A Lifetime!!



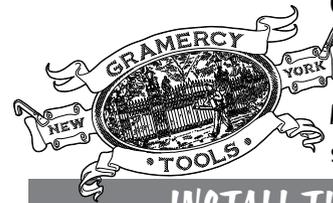
You'll call them "miracle holdfasts" too when you see for yourself how rugged, durable holdfasts shrug off the most difficult of work holding tasks... And install easily in nearly any bench or work surface. Biggest miracle of all is the price! Produced especially to meet the needs of woodworkers, and craftsfolk everywhere, Gramercy

holdfasts are low in cost... Gives you more for your money. And you can install economical Gramercy holdfasts in every room in your home... Just drill a 3/4" hole and whack them into place! Try Gramercy holdfasts, at your local Gramercy dealer, or online at...

...www.toolsforworkingwood.com

GRAMERCY TOOLS COMPANY OF AMERICA

Brooklyn, U.S.A.



Manufacturers of: holdfasts — backsaws — turning saws
saw vises — finishing brushes — rasps — hammers

INSTALL THEM YOURSELF AND SAVE!



It's easy! Just bore a 3/4" hole through your workbench or surface.



Insert the holdfast, and whack it to clamp your workpiece.



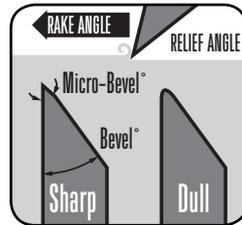
To Remove: give the holdfast a firm tap on the back while pulling up.



Show off your handiwork. (Don't say what a cinch it was with Gramercy Tools' miracle holdfasts.)

SHARP: TWO SURFACES MEETING AT ZERO RADIUS

WHAT IS A SHARP EDGE?—An edge is formed when two flat surfaces meet. At the business end of an edge tool, the angle at which they meet is called the BEVEL ANGLE. Edges are considered to be SHARP when there is no rounding, or radius connecting the two surfaces. Zero radius is an unattainable, idealized condition, but the closer you can get to it, the sharper your edge will be.



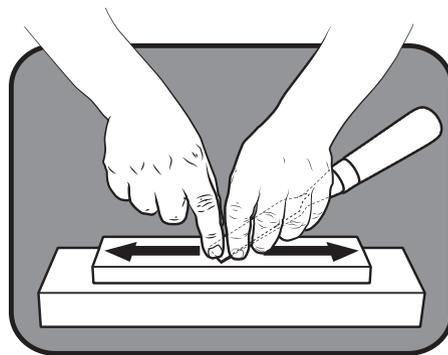
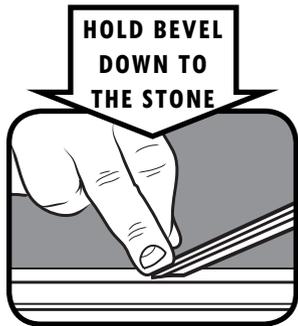
STEEL IS SHARPENED WITH ABRASIVES—When we sharpen, we employ abrasives to form a burr, and then remove it by using progressively finer abrasives. AKA: Chasing the burr. The result is a satisfactory edge; free from fragile jagged points, dull spots, and defects. There are different types of abrasives to choose from, each with different properties and advantages



WATERSTONES can be natural or synthetic, and are comprised of sharp, irregular particles. These quickly scratch away steel, but also break down quickly, revealing fresh abrasive particles below them. For this reason they are said to be FRIABLE. It's why waterstones work so quickly, but also why they become dished and require flattening from time to time.

OILSTONES are made of more durable particles, and therefore less friable than waterstones. They cut less aggressively, but their resistance to dishing makes them ideal for sharpening gouges and other shaped edge tools.

DIAMOND STONES are comprised of diamond particles bonded to a substrate. Their extreme hardness is ideal in situations where having a non friable stone is critical, or when sharpening exceptionally hard alloys.



SHARPENING TECHNIQUE—Sharpening is easy. The trick is to hold the surfaces that form the edge flat against the stone. To sharpen a chisel, use your first or second finger to apply pressure at the tip, then support the tool's weight with your other hand. Drag the tool across the stone in a "W" shaped pattern to evenly wear the stone. Do this for both sides of the tool. Start with your coarsest abrasive. When a slight burr can be felt across the edge, that is the signal to move to a finer abrasive.

TOOLS FOR WORKING WOOD PRESENTS:

English Hand-Tool Manufacture

A four-part journey through
Sheffield and Lincolnshire.

"Legendary!"

MASTER TOOLMAKERS

"Stunning!"

HIGH DEFINITION COLOR

Ray Iles' Workshop

The LEGEND of LINCOLNSHIRE has worked in tool manufacture since age 15, when he learned the trade from his father.

A Visit To Clico & Clifton

A HYPNOTIZING look at one of the few remaining tool manufacturers in Sheffield. Master craftsmen forge, grind, polish, and cut with amazing speed.

Ashley Iles DOUBLE FEATURE

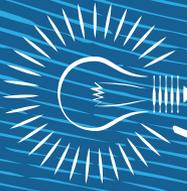
PART I: Listen to the sweet ring of hammer & anvil, as steel becomes blade.

PART II: In an EXPLOSION of SPARKS, TONY ILES grinds carving and turning tools with death defying precision.

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