Frame Saw, Bow Saw, Buck Saw, Fiddle

By Steve Watts and David Wescott, 2013

"A man's outfit is a matter which seems to touch his private honor. I have heard veterans sitting around a campfire proclaim the superiority of their kits with a jealousy, loyalty, and enthusiasm they would not exhibit for the flesh of their flesh and the bone of their bone. On a campaign, you may attack a man's courage, the flag he serves, the newspaper for which he works, his intelligence, or his camp manners, and he will ignore you; but if you criticize his patent water bottle he will fall upon you with both fists."

Richard Harding Davis, Notes of a War Correspondent, 1910

Such a warning has never been more timely than when entering into the realm of the modern "bushcrafter." With the addition of this relatively new field to the woodcraft vernacular, proponents are almost rabid about their tools and the abuse they can take – the result of the "*If you only had one tool with you in the woods what would it be*" way of thinking. Having been taught to always use the right tool for the job, one has to admit that a knife works best when working with the woods grain. But, in todays world where cruising timber and felling trees with an axe is a rare circumstance, when it comes to working cross-grain, there is nothing better than the queen of tools, the buck saw.

Two Ben Hunt saws made in the shop from scarp materials.

The Frame Saw Family

Bow saws, buck saws, and turning saws are often lumped together into a single category – the frame saw. It's traditional look – two parallel "cheeks" connected by a thin blade at the bottom and an adjustable tensioner on the top, separated by a rigid cross-bar that provides a fulcrum for creating tension on the blade – is a historically classic design. Because the blade is under tension, it can be significantly thinner than an ordinary hand saw blade, which has to be much thicker so as not to buckle when pushed.

A Bit of History

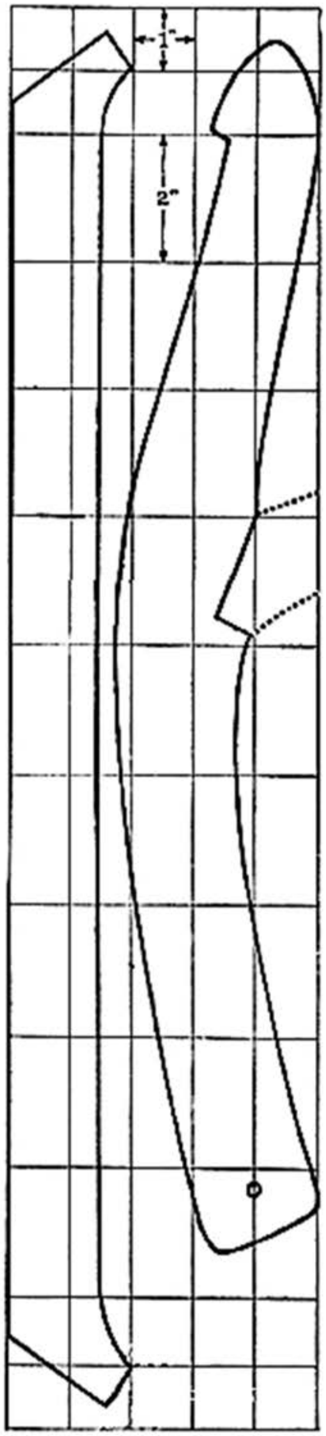
Flint knives with serrated or "toothed" edges indicate that prehistoric people used saw teeth on wood, bone and other hard materials. But when it comes to stone tool efficiency, there is really no stone age equivalent to a saw…the last in the tool kit to come along, and a distant 3rd to the stone axe and knife.

The oldest known metal saws are over 6,000 years old, were made of copper and were found in Egypt.

(more)

Take-Down Buck Saw

By Ben Hunt



Illustrations from
Boy's Life, November 1952

If you don't have access to a copy machine that will enlarge, simply make a 1"x2" graph and enlarge the pattern the old way.

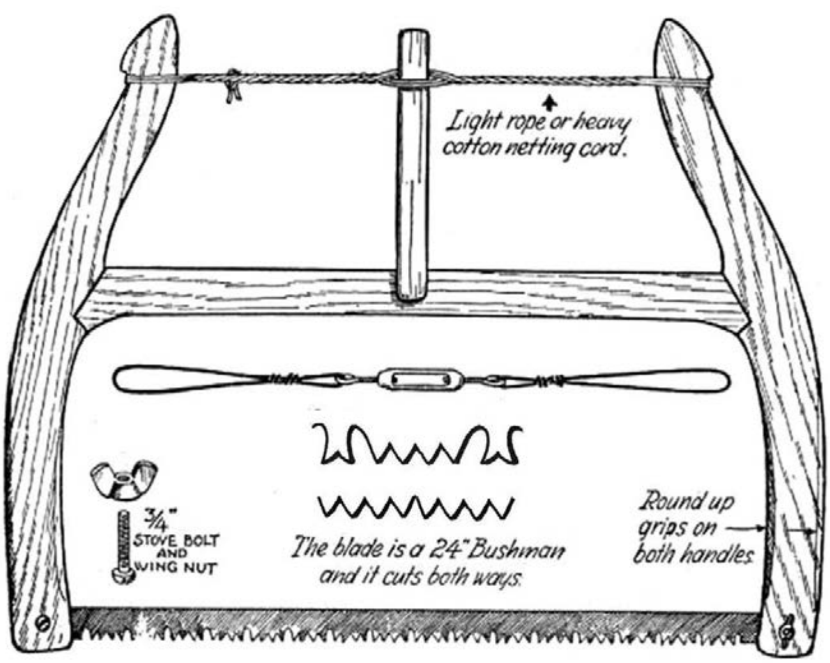
The Shop-Made Saw

This one is a beauty but falls outside of Hunt's rules for our project, requiring the use of power tools to do the pattern cutting. The reproduction shown on the previous page was made in the shop with all scrap materials (ash) except for the turnbuckle that was purchased for a couple of dollars at the hardware store.

A tight joint is achieved by attaching the blade to the uprights and moving them to the desired position. The wood for the bar is placed under the uprights and the angle of the cut is scribed onto the wood. An accurate cut results in a nice clean joint.

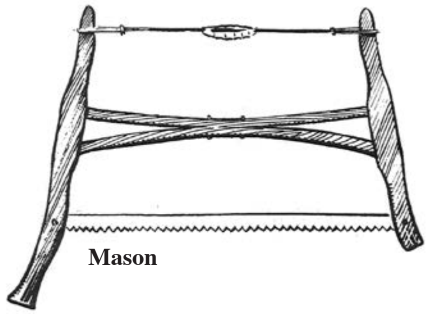
With the proper tools, this is actually an easy saw to make. There are a few nice tutorials on-line that create similar patterns and have additional instructions. One of our friends, George Crawford at ***paleotool.com*** has a few listed that he has offered to beginner students at skills gatherings, using only hand tools. *Enjoy!* **DW/SW**

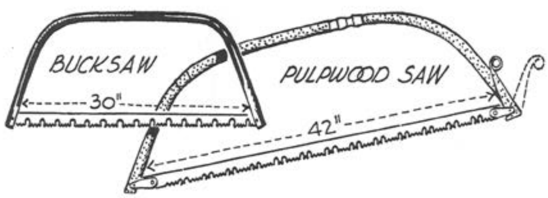
Carefully scribe the end of the stretcher to match the notch cut into the upright.



"This turnbuckle tightener made of 3/32" soft iron wire (coat hanger) will give better service than rope. Any small turnbuckle will do." Ben Hunt

The Frame Saw Family





- **Frame saw** – tension is on the blade that is held between 2 parallel beams.
- **Bow saw** – a tensioning device replaces one side of the frame.
- **Turning saw** - frame saw with the ability to turn the blade on its long axis. Very thin blades (1/4" wide) can be used to cut compound curves.
- **Buck saw** – cross grain cutting saw used to "buck up" long logs into short pieces. Bucksaws feature coarse teeth that allow them to work with very big timber – both green and dry wood.
  - **The Swede Saw** – a bowed metal frame with a tensioning clamp. Invented in the 1920s, and known in lumber camps as the ***Swedish Fiddle,*** it is a durable tool used for cross-cutting branches or large-diameter firewood, with blades as long as 24 to 48 inches.

Folding Buck Saw

By Ben Hunt

This is a great starter project and can be done with cheap 1"x2" pine furring strips for a test piece. All you need is a rigid hand saw, and 1/4" chisel (no power tools needed), a saw blade and nuts & bolts from your shop bin.

Note: When adding mortises on any project, try not to go in more than about a quarter of the way into the the stock - it weakens the upright.

Also, drill the holes and bolt the saw blade in place before cutting the spreader bar to length. The distance created by the placement of the holes and those in the blade, establishes the actual length of the spreader when the sides are moved 90˚ to the blade.

DW/SW

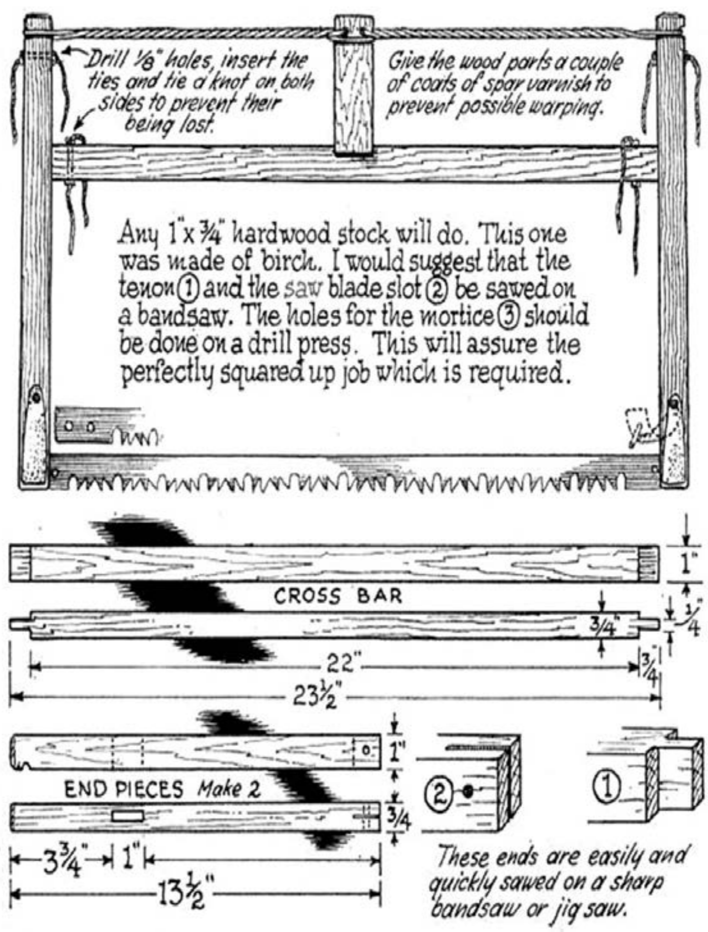


Illustration from
***Boy's Life*, May 1962**

Note: The placement of the stretcher bar in this illustration seems a bit too high.
A bar placed closer to the blade allows more leverage with the tightening cord, thus making the blade more rigid.
But be aware, that this space limits you to 1/2 the diameter of any log you may want to cut.

Saw Safety

Mason

To prevent the saw from jumping out of the starting kerf and hitting the hand, simply reach through the saw and grab the log, if the size of the saw allows you to do it.

Jennifer Mancke Photo

To Tenon or Not To Tenon

That IS the question!

For all practical purposes, the pressure on the spreader-ends holds it in place, so it works quite well without any tenon when using square stock, or a simple saddle carved into the spreader ends for round stock. It may be secured from being knocked out of place by adding any number of notch or tenon options.

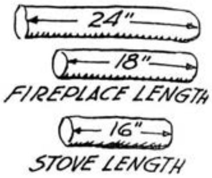
A small wooden dowel or nail may also be used as a tenon with a dill-hole mortise.

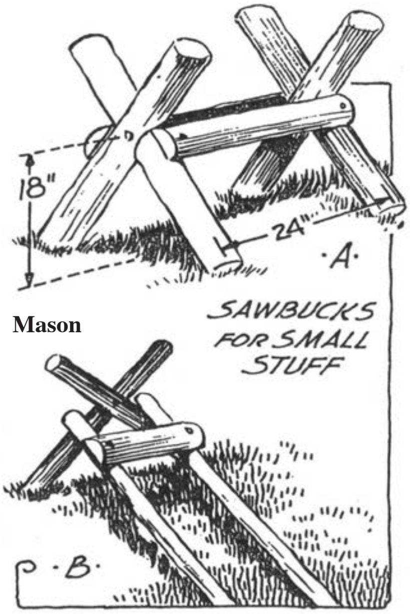
Bucking

"Sawing is always easier with some sort of a makeshift sawbuck."

"With this one, the two saplings are pointed and driven into the ground, and then lashed together." Ben Hunt.

Hunt





Mason

Except where hug-sized logs are needed for a fire to survivive the night, most camp or cooking fires require only wrist-sized wood that can be bucked with a saw and split with a small axe or stout knife.

The Backwoods Buck Saw

As Featured at the Kamp Kephart Workshop, 2013

Getting proportions for a 21” blade.

Wrong!! Rotate the uprights so the tips touch.

Locating the notch for the spreader.

Cutting pins for the blade.

The kerf must be in line with the notch.

Measuring the spreader.

Winding the cord with the toggle.

Ready to cut wood.

Continued...

Later, tin was added to create bronze blades that were much more durable.

The saw is often overlooked since it's not as versatile as other tools – it is intended for a very specific job. Besides that, it's much more energy efficient to buck wood with a saw than with an axe. The frame saw evolved from earlier saws, but was used both in ancient China and Europe. But as Bernard Mason says, *"frames do not cut wood, which leads us to the second point of superiority, the business edge of its cutting blade. "*

It wasn't until 1886 that the first Swedish steel or Bahco saw blades were produced using high-quality steel, previously molded to make fish hooks. Their strength and durability changed the world of cross-cut sawing. A tooth pattern that Mason recommends *"has four cutter teeth and a raker, the pattern of which, shown in the drawing, should be firmly fixed in mind so that it can be readily recognized. The purpose of the raker is to clear out the sawdust from the kerf."* The Bahco "peg-tooth blade", is intended for dry wood so has no rakers.

Through time, the buck saw has become the largest of the frame saw family. Since everyone needed wood to heat and cook, the old buck saw stood ready in every household - it still serves the needs of the woodcrafter.

Tutorials

- **For Visual Learners - Bushcraft Saws**

Bushcraft Bucksaw - an easy DIY wilderness hand saw - https://www.youtube.com/watch?v=6ebDxq8mVaY&t=3s

Making a frame saw / buck saw for bushcraft - https://www.youtube.com/watch?v=Cl-_n2yM8c0&t=611s

Bushcraft Collapsible Bucksaw - https://www.youtube.com/watch?v=RnYy4V7fJeY&t=979s

- **Making a saw that folds into itself.**

DIY Folding Saw For Camping - https://www.youtube.com/watch?v=TbW52itbSek

- **For Visual Learners -Shop-Made Saws**

Making A Frame Saw - Paul Sellers - https://www.youtube.com/watch?v=Z4LohjmskEk

Parts

Cord – tensioner, cable, string
Toggle – windless, winder
Uprights – cheeks, frames, verticles
Stretcher – beam, cross bar, spreader
Blade - peg-tooth, bushman
Pins – pegs, nuts & bolts, clevis pin

Trouble Shooting

- ***The Cord*** - Try to use non-elastic cord or wire. An elastic cord that is tightly wound can explode without warning. If using 550 parachute cord, use just the outer sheath and remove the inner strands.
- ***Bolt vs Pin*** - Bolts or screws work best to pin through square stock - be sure to leave enough material so the pin cannot pull out. When using round stock, cut a small notch on the outside of the upright and put a wooden pin through the blade hole. The pin will pull into the notch and stay put.

Illustrations from

1945 **- Mason, Bernard S.**
The Book of the Junior Woodsman
1952 - Hunt, William Ben
Take-Down Buck Saw, ***Boy's Life*** magazine November 1952
1962 - Hunt, William Ben
*Folding Buck Saw****, Boy's Life*** magazine May 1962

The Paul Provencher improvised bow saw.