

A Long-Term Survival Guide – Improvised Bridges:

Log Bridges: Knowing how to make simple log bridges can keep you from being stranded, in a long-term survival situation, and can make life much easier at your retreat site, when crossing streams to gather firewood, check traps, etc. The simplest design is made by laying one or more logs across a stream. The ends of the logs can be dug into the earth, if desired, to make driving a vehicle onto the logs easier, or earth can be ramped up at each end, instead.



These log bridges are made by using six logs, in two sets of three, and will support vehicles.



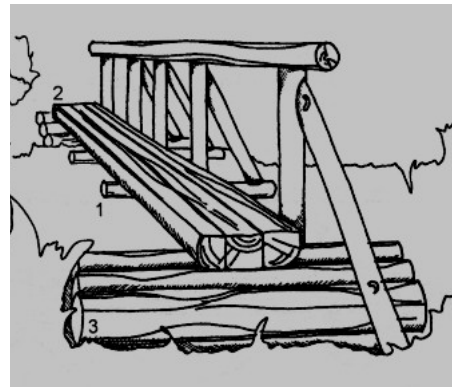
The six-log bridge easily supports a truck, if made with sound logs of a sufficient diameter.



Due to gaps between the logs, it is safer to push a bike across log bridges, than ride across.



A log bridge can keep you from being stranded, but falling off can make your situation worse.



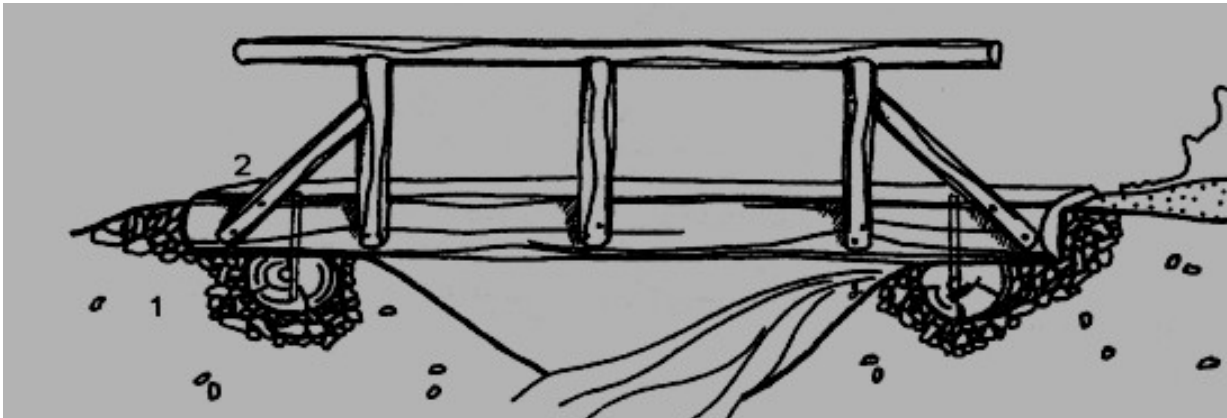
Balancing on a log bridge will quickly make you appreciate the value of having a handrail.



A handrail makes crossing a log bridge safer, especially if the log is wet, or if you have a pack.



Hand railings should be securely fastened to the log, and the ends well-braced, for extra stability.



This diagram shows one way to make a single log bridge. The small log is secured to buried end logs, to keep it from rolling over, and the railing is well-braced at both ends. The top of the log can be left round, or hewed flat.



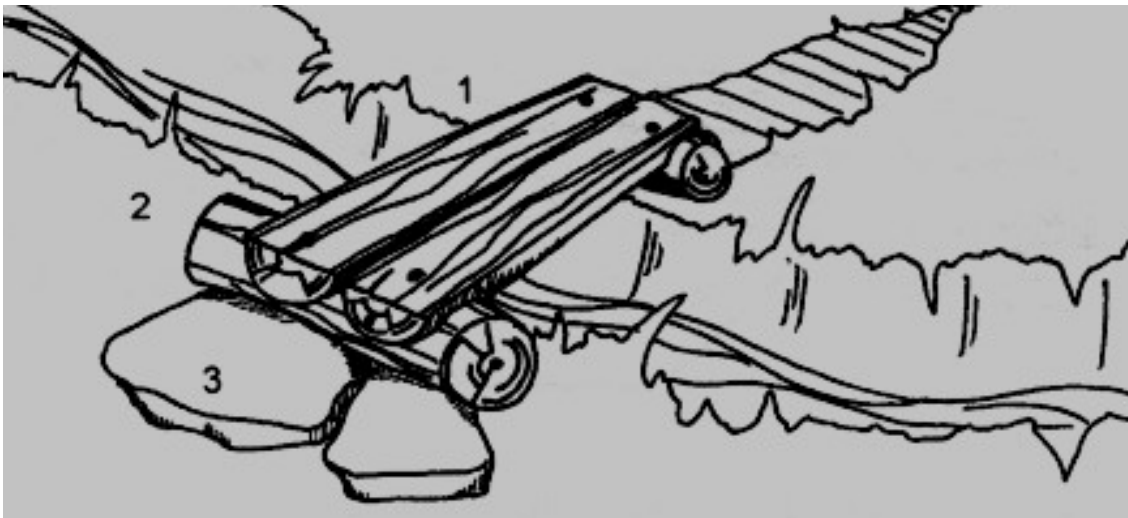
This log bridge has log ramps at each end, with steps cut into the log ramps, for secure footing.



One method of connecting log post railings; joints like these make sturdy and secure handrails.



This bridge is made by placing logs on raised platforms at each end, for more bridge clearance.



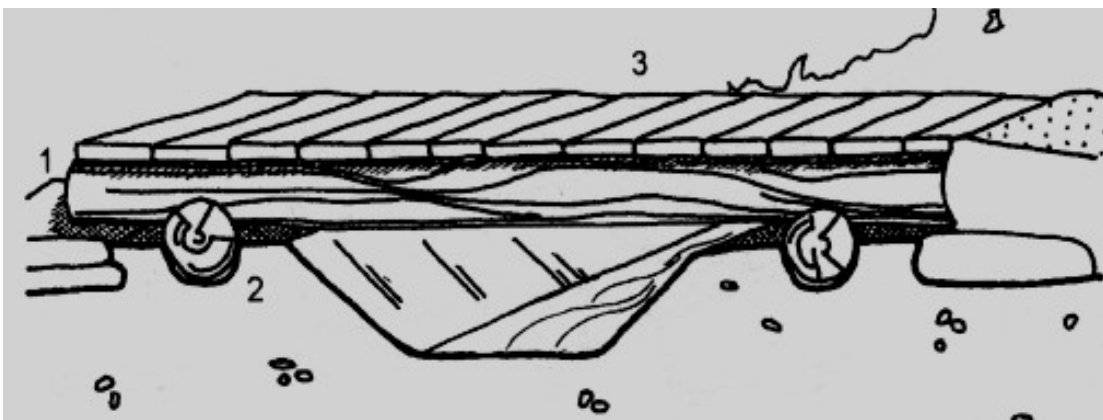
With this design, the platforms can raise the log bridge up enough to keep it from being washed away by high water after heavy rains. The platforms can also be used to make the bridge level, if the banks are uneven, by building the platform taller on the lower bank, until the bridge is flat.



The logs on platform bridges can be left round, or hewed flat, as desired.



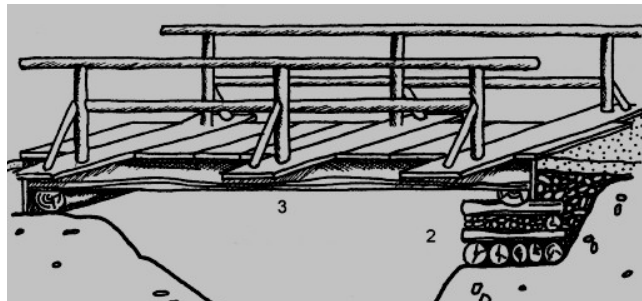
Another bridge is made by laying two logs across a stream, and covering them with planks.



This design makes a very safe and smooth bridge, but takes more time to make.



If you don't have planks, this bridge can be made by using smaller logs as the cross-members.



Log and plank bridges can have log edge guards added, or handrails on one or both sides.



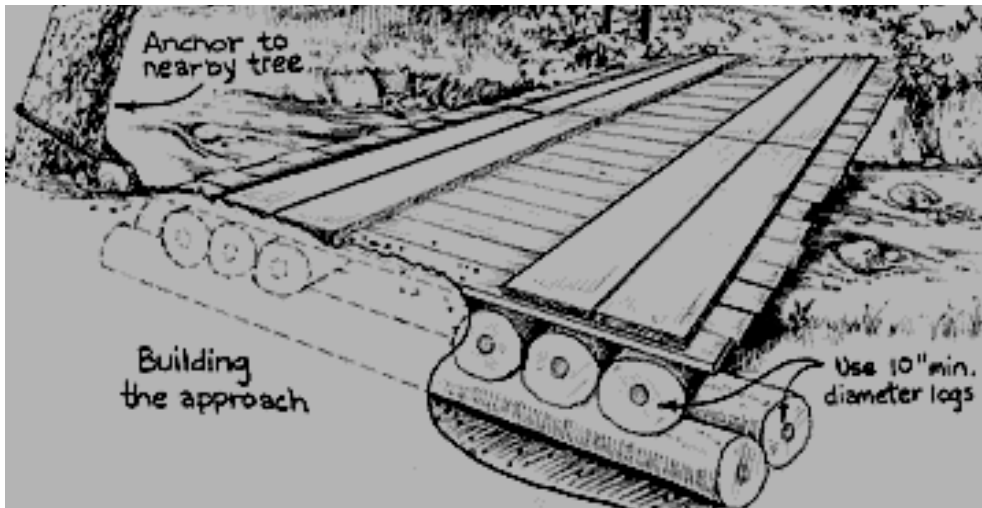
Handrails can be as rustic, or as finished, as you want to make them.



Other bridge types; these one-log and two-log bridges are made with widely-spaced plank steps.



In swampy areas, a series of bridges can be used to span wide stretches of marshy ground.



This design uses a combination of features from other bridges, and will support heavy trucks.



Rope, or Vine Bridges: Gaps that are too wide for log bridges, are easily spanned by bridges made from rope or vines. Vine bridge designs have been around for thousands of years.



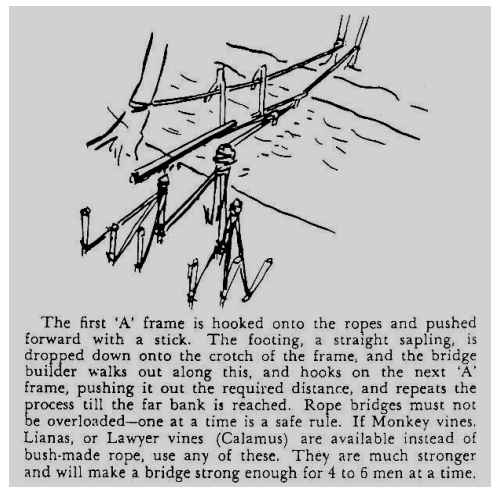
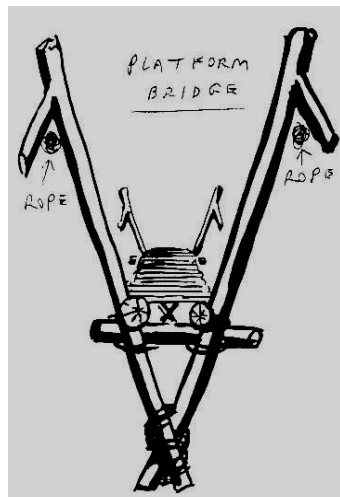
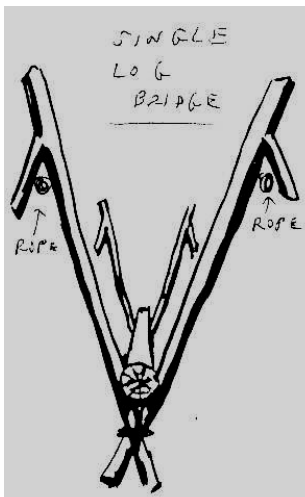
Vine bridges can be simple, crude jobs, or large, sturdy creations that are works of art.



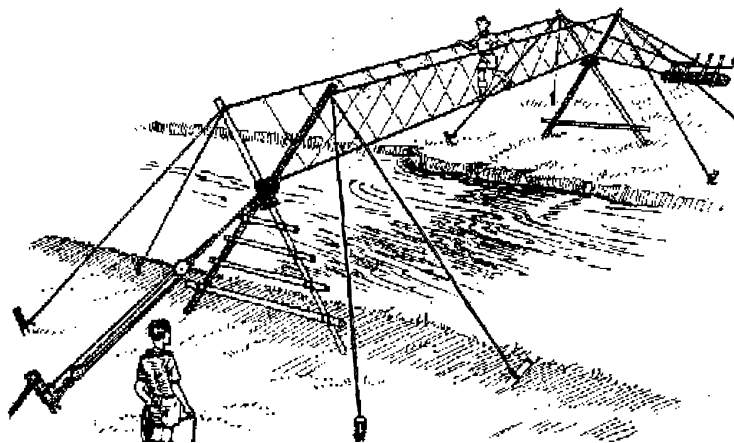
Vine bridges can be made entirely from cordage, or a combination of vines and sticks.



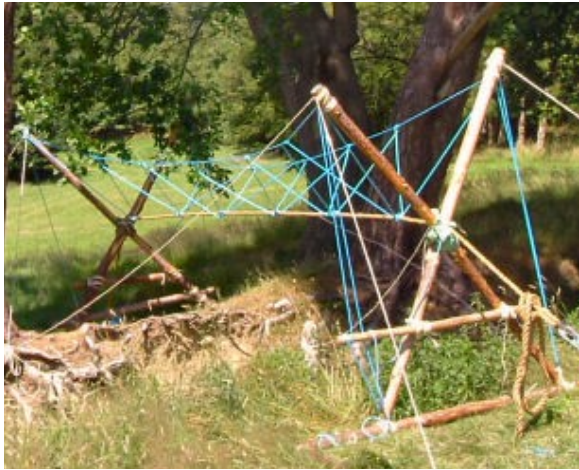
Here is a simple design for a rope and stick bridge, or a vine and stick bridge.



The rope and stick bridge can have a single log foot support, or a wider platform walkway.



If no trees are available, rope bridges can be supported by a pair of crossed poles at either end.



Here are two examples of the crossed-stick rope bridge design.



Sometimes you can find a tree or two in just the right position for a rope bridge.



Guy ropes can be tied to the bridge on either side, and are used to reduce the notorious sway of rope bridges. Using extra rope (or vines) on the hand lines makes crossing a rope bridge safer.



Rope and stick bridges can be made with widely-spaced rungs, to use less sticks, if wood is scarce.



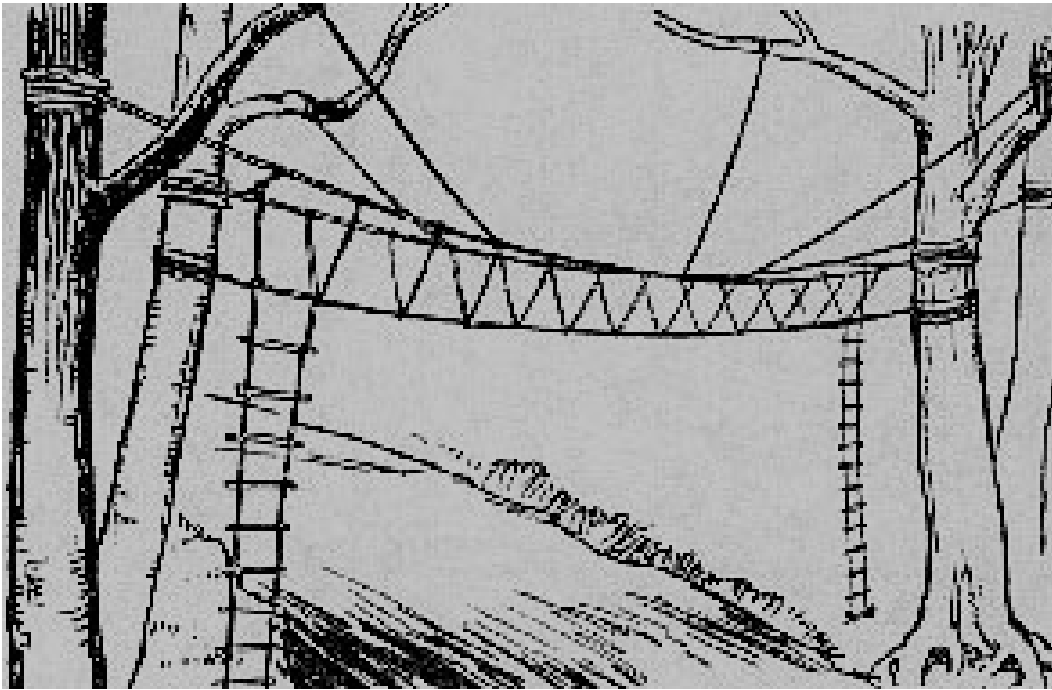
More elaborate vine bridges are common in tropical areas, where large vines are plentiful.



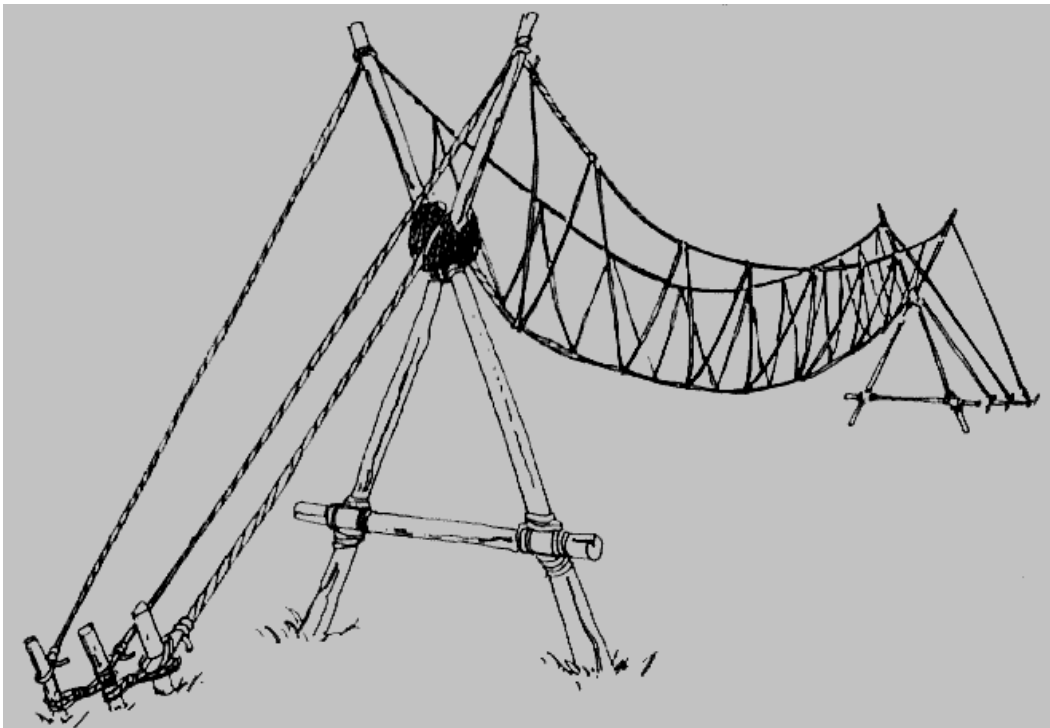
Large vine and stick bridges have thick suspension cables, made from many vines twisted together.



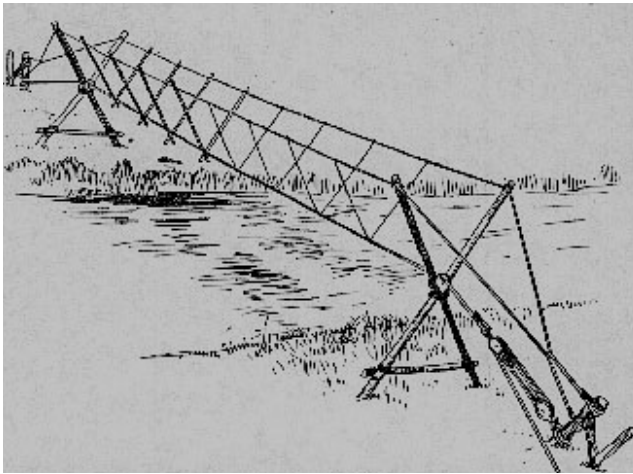
Vines are woven while green, and secured with hitches; tying knots in vines will make them split.



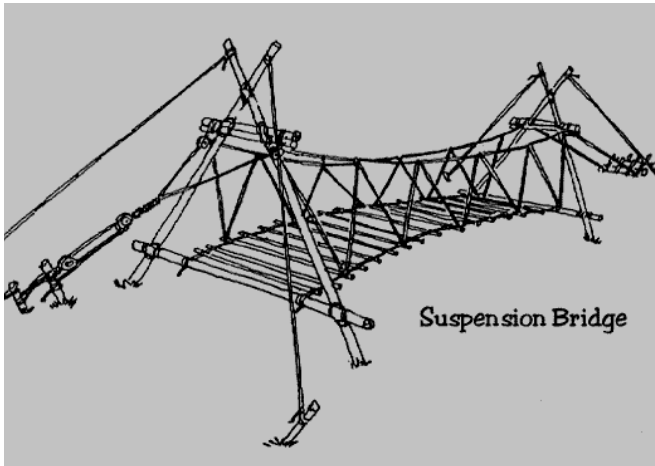
Rope bridges can be built above flood waters or floating debris, and are reached by ladders.



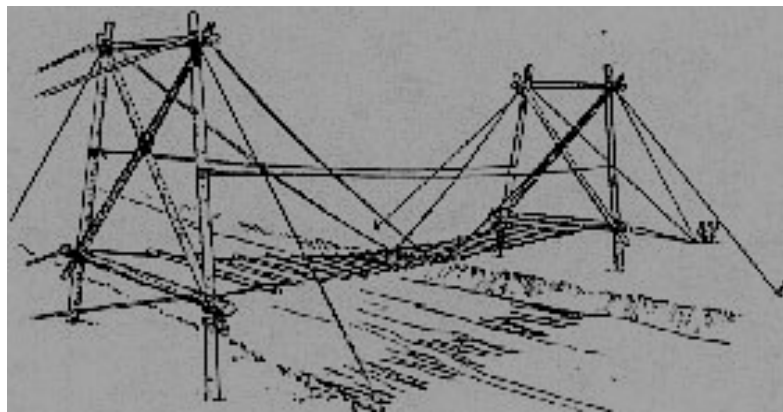
The crossed-pole type of rope bridge can be made taller, for more river clearance, if necessary. Ladder rungs can be lashed to the crossed poles, or the guy ropes can be made into access ramps.



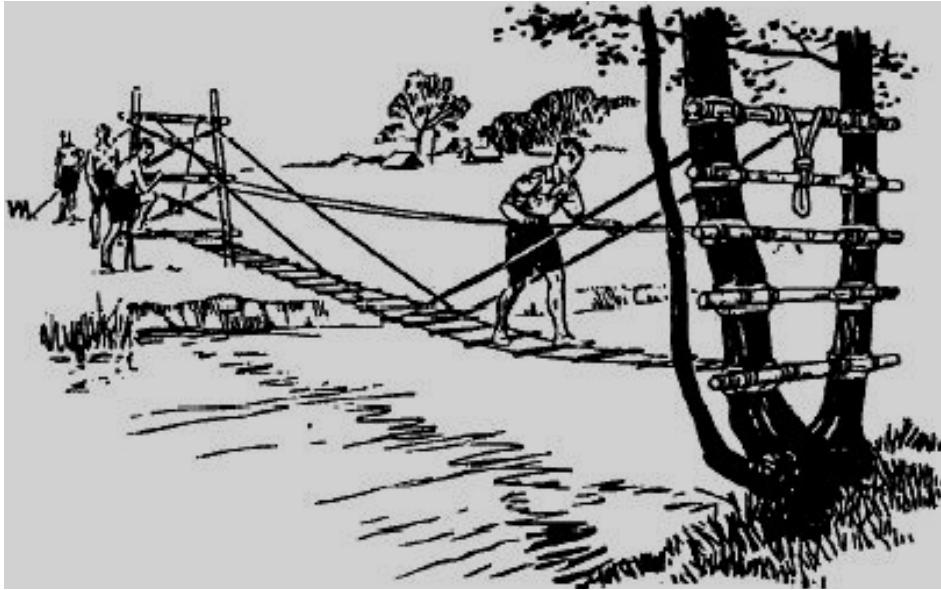
Larger rope bridges may tend to sag; use a block and tackle to tighten, if ropes stretch.



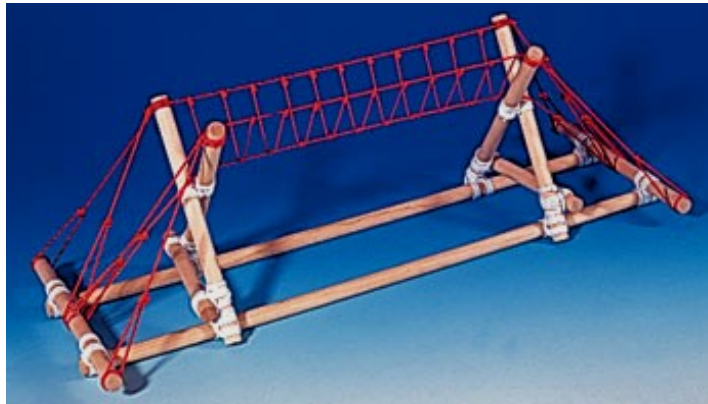
A crossed pole bridge can be made into a suspension bridge, like this example.



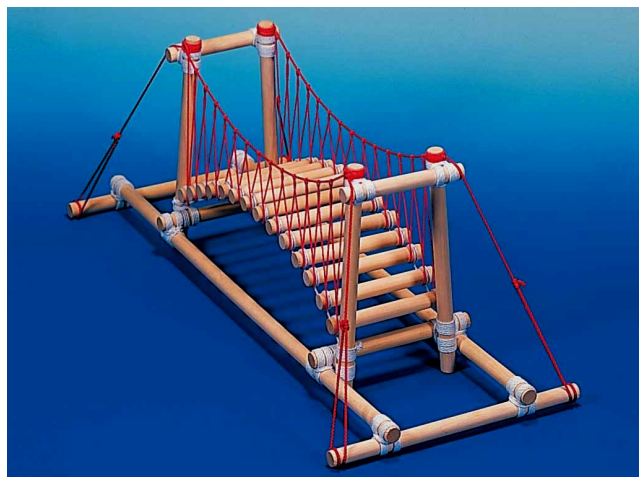
Walkways on suspension bridges can be arched, or flat, but arches give you more river clearance.



If one end of a bridge is secured to a tree, a pole or rope ladder can be used for access.



Models: A model of any bridge can be made first, before building a full-sized one.





Bamboo Bridges: Bamboo bridges can be as simple as one or two poles, with a handrail.



Slightly more advanced bamboo bridges use more foot poles, and more handrails for balance.



Bamboo can be made into free-standing arched bridges, like this example.



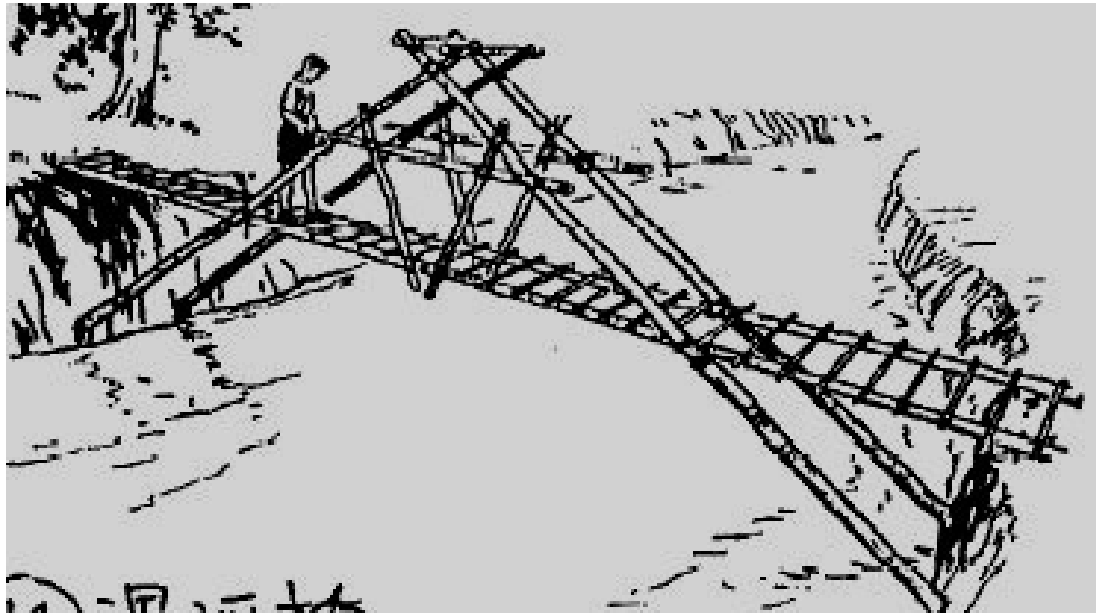
Bamboo bridge on bamboo pylons (filled with rocks), and nice arched bridge.



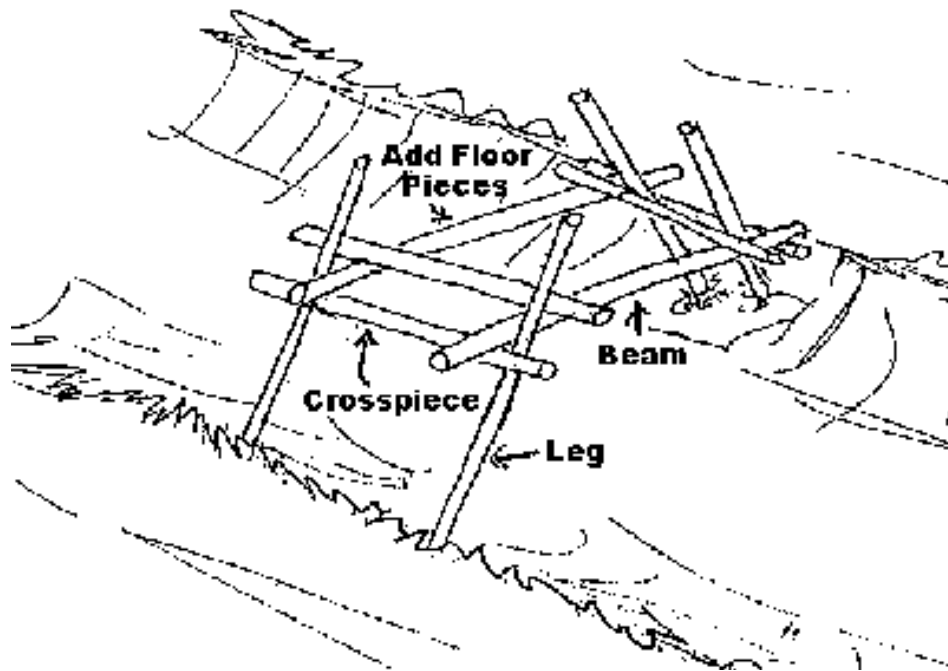
This large bamboo bridge lets vehicles transport garden produce to a local market.



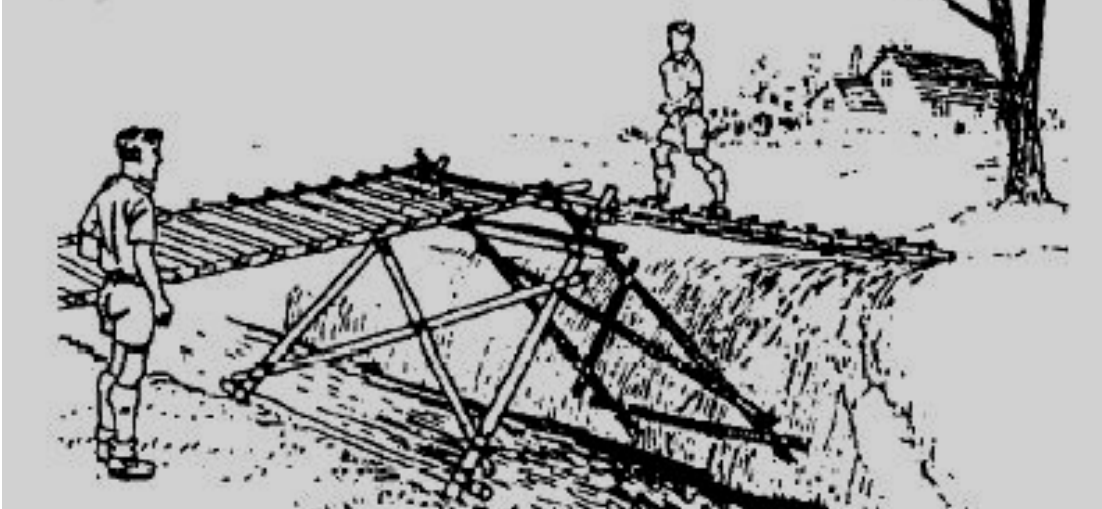
This bamboo bridge runs from the mainland to an Island, where the locals grow produce. Believe it or not, the bridge, which can support heavy cars and trucks, is dismantled every rainy season, to keep it from being washed away.



Here is a design for an A-frame pole bridge. This design can be improved by making the four poles slant together, so that the four tops meet in the center, and the four bottom ends are spread out, to be wider than the walkway is.

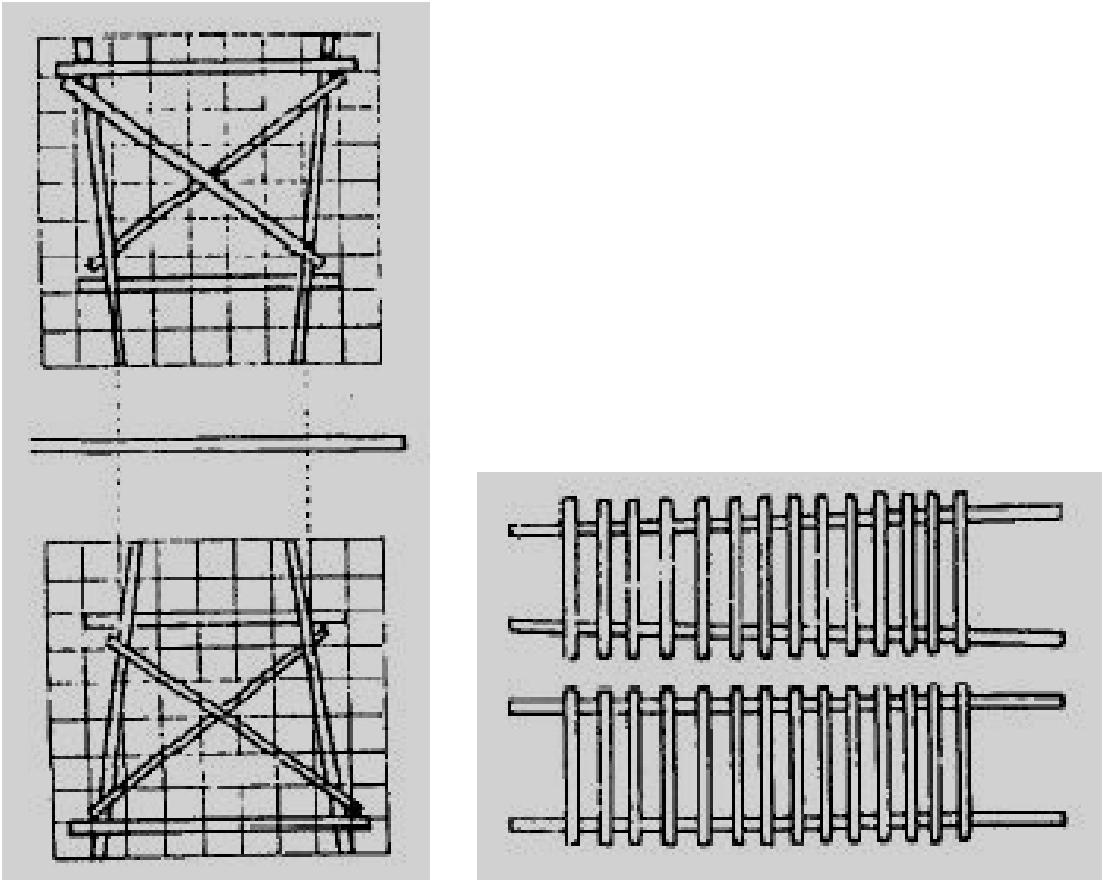


Here is a design for a bridge that is held together by the interlocking of the frame members. Friction bridges such as these should also have the logs notched where they meet, or they can be lashed together for extra security, or both.

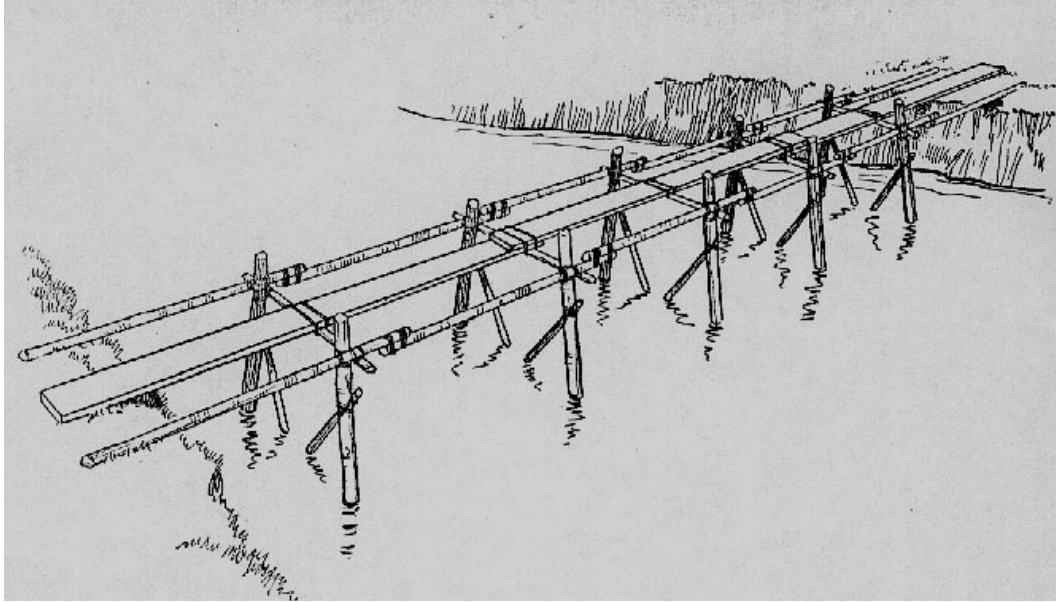


This bridge is made from four sections (and an extra pole) that interlock, like a friction bridge.

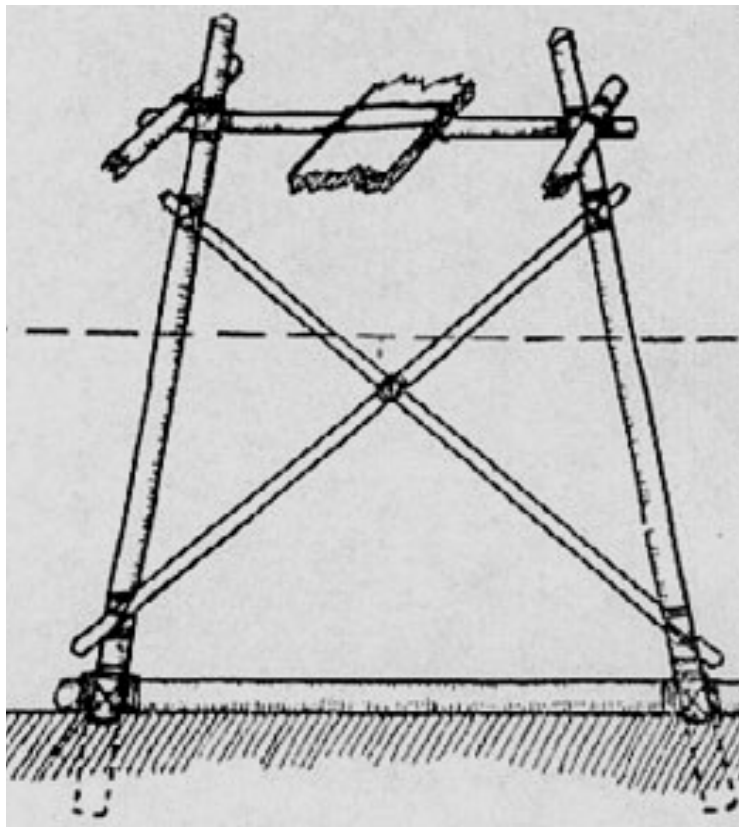
(This is a side view of how the assembled bridge should look.)



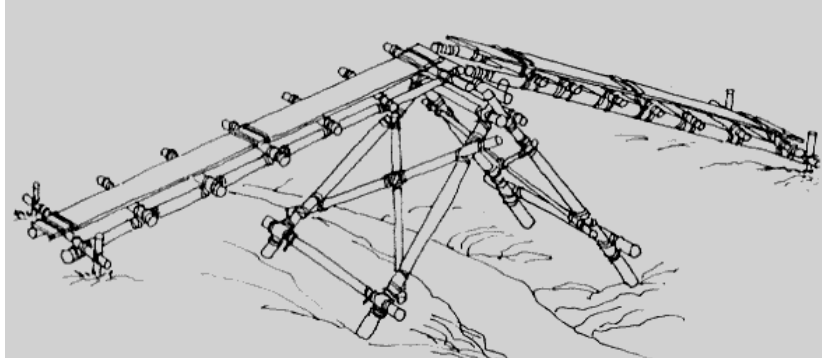
This is how the four sections, and the extra pole, should look before assembly.



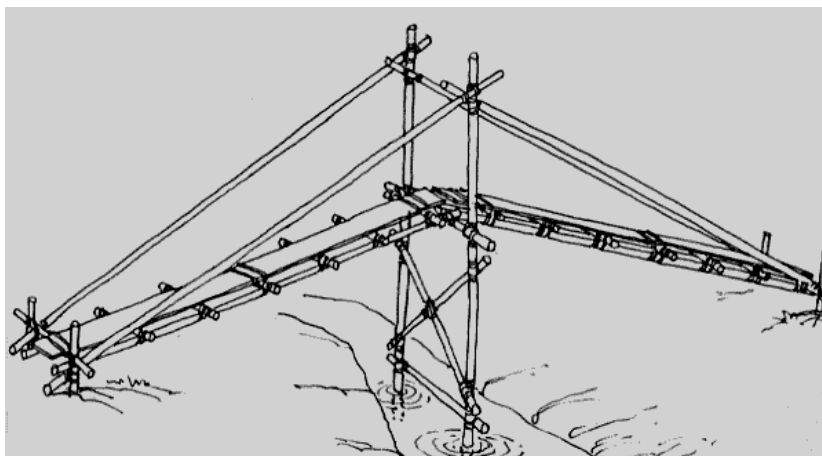
Here is a simple plank bridge that uses a series of supports. This design is best for still waters, such as swamps, marshes, ponds, or small lakes, but it is also good for making a level crossing, for small streams in wide ditches.



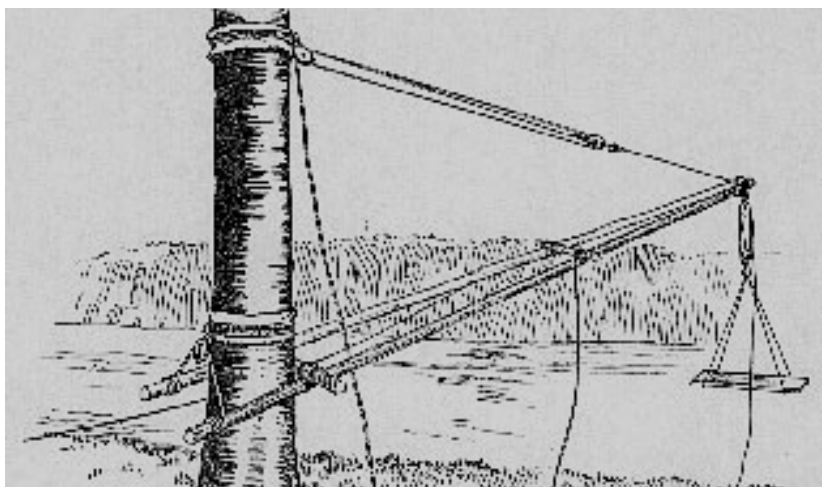
Here is how each support is made. The main poles should be sunk into the bottom, if possible.



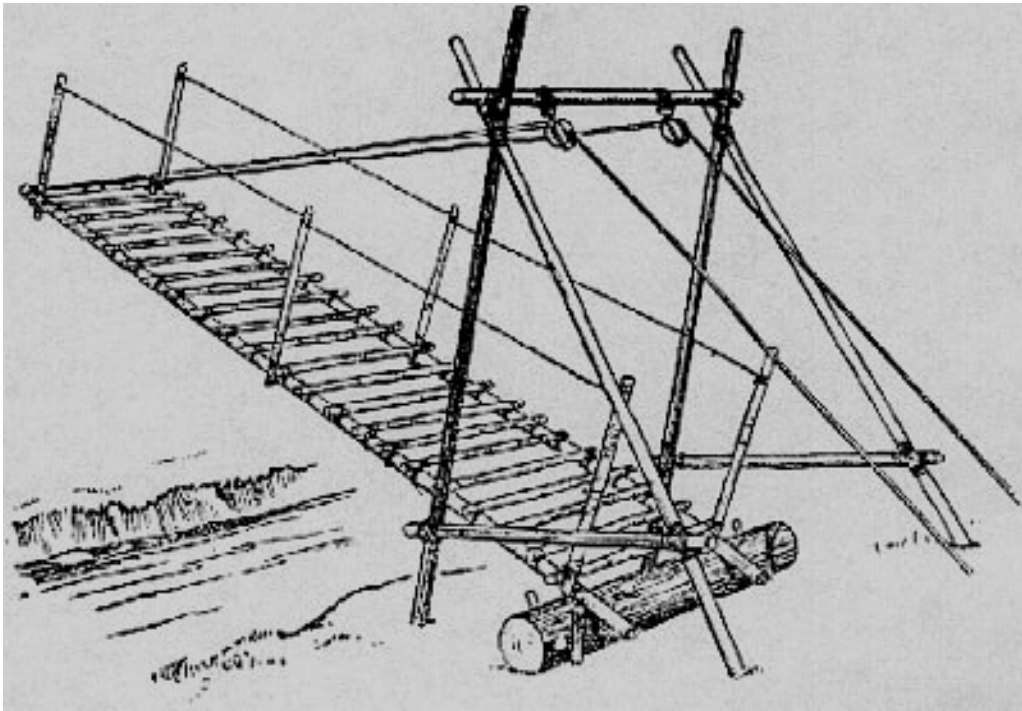
Here are two more ways to make a bridge over a small stream. More cross-poles can also be used to make the walkway, instead of using planks.



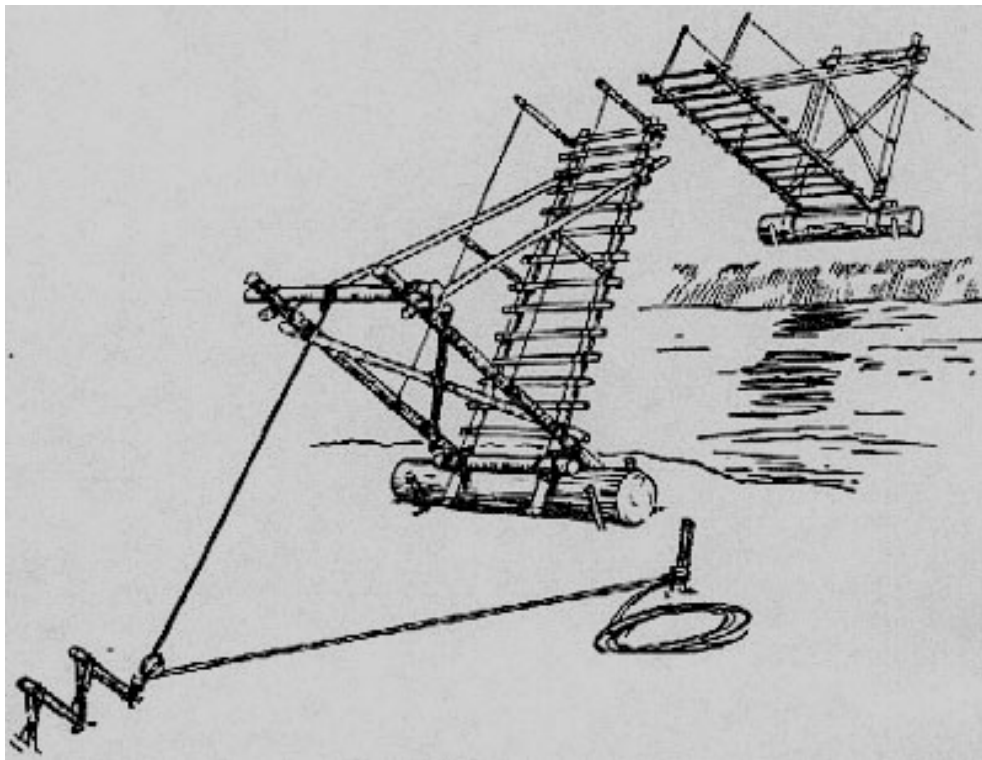
This bridge has one center support. (These pole handrails can be added the first bridge.)



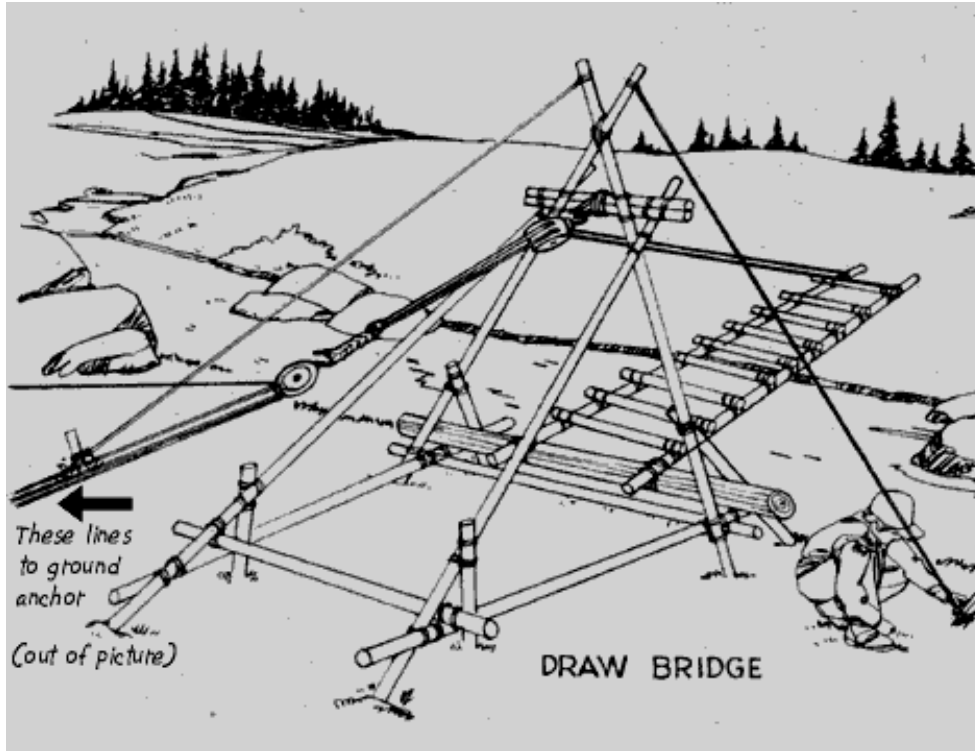
This is a novel type of “bridge”, which is more like a crane. You can raise and lower a passenger, and swing the assembly and seat across from one side of the stream to the other, to transfer people, or equipment and supplies. It also has a tactical advantage over fixed bridges, in that large numbers of people can’t rush across it at once, a feature which could come in handy, in certain situations.



Drawbridges: Drawbridges are fun, and they can be raised up, to let boats pass by.



Two drawbridges can also be used together, to bridge wider streams, if desired.

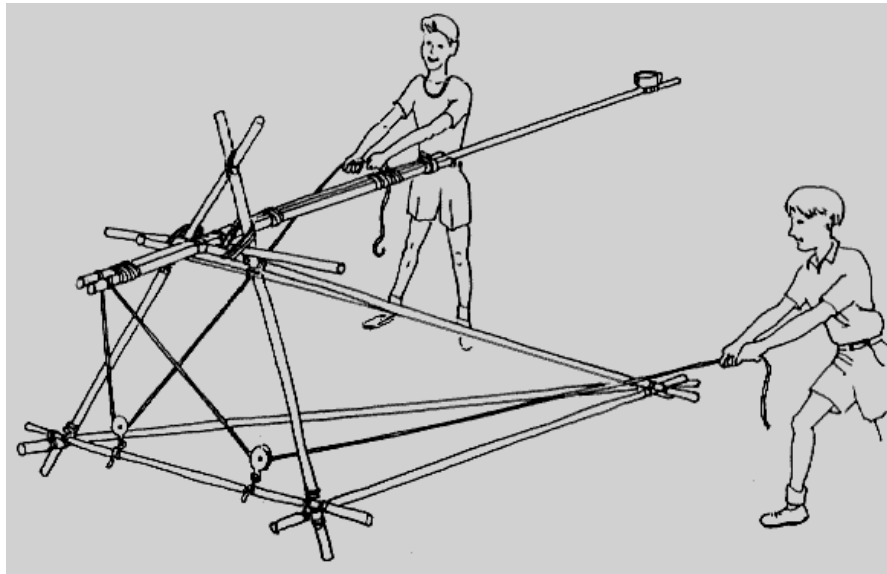


This is another drawbridge design, which uses a large pole framework for stability.

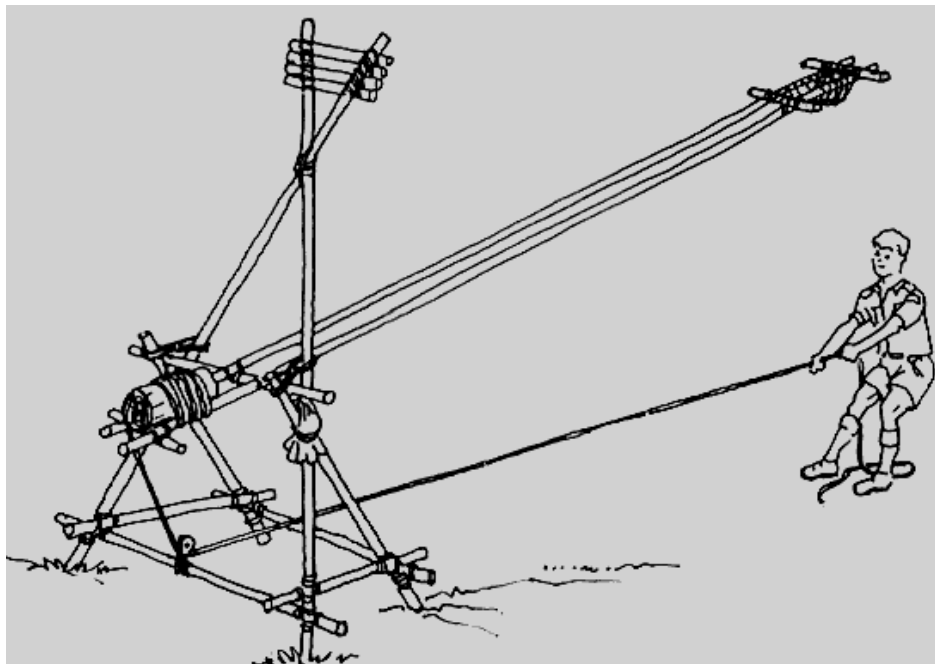


This drawbridge design uses a counterweight lifting system.

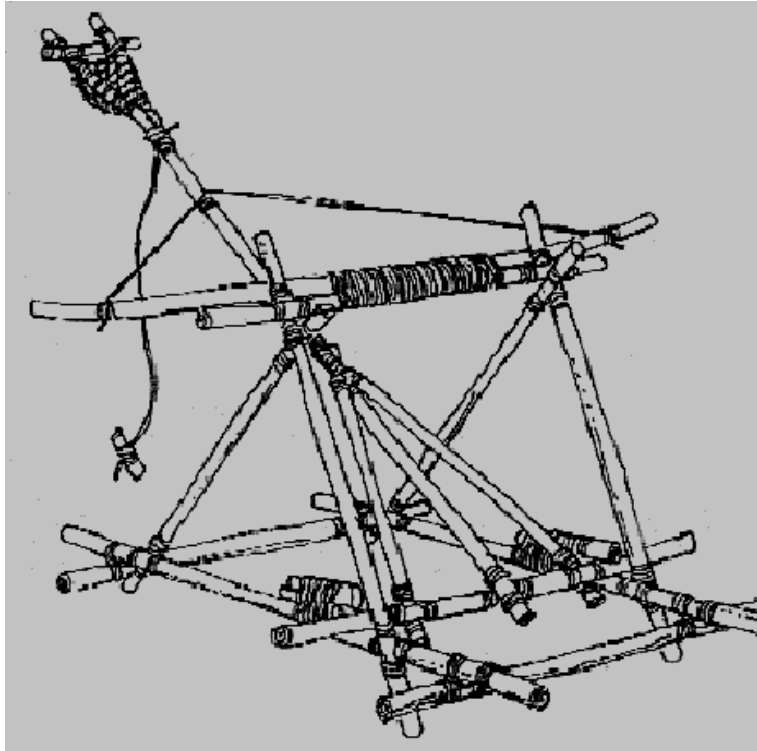
Catapults: Getting a starter rope for a rope bridge across a wide river or deep gorge can sometimes be a challenge. If you can't ferry one across by boat or on foot, or if there is no one on the other side to tie off the first rope, a catapult may be the best way to get the job done. Here are some designs for simple catapults, which are fun to build and use, and which can throw a rock tied to a sturdy rope across a much wider gap than can be done by hand. The idea is to throw the weighted end of the rope into a tree, where it will become securely entangled, so you can cross.



This design is very simple, and is powered by pulling on ropes, but elastic cords also work.



This design uses a weight on the end, to make getting the throwing arm moving easier.



This catapult uses a large wood or bamboo bow, to move the throwing arm.



A catapult design can be built as a model first, before constructing a full-sized version.