



Tool Tip...

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Simple Spiking Horses You Can Build

Any device that aids in wrapping twine around a canister shell is known as a spiking horse. This stringing process, called spiking, requires that strong twine be wrapped as tightly as possible around the shell in order to insure a good break. While this can be managed by holding down the shell with one hand and pulling the twine around it tightly while wearing a pair of gloves, this method is tedious and much more labor intensive than it has to be.

The spiking horse came into use in order to reduce the fatigue on the hands and arms of workers, as well as alleviate the irregular tension that results from hand spiking. The name itself implies an immovable structure with "legs," perhaps nothing more than two posts buried in the ground. These parallel posts are "loaded" by wrapping the proper amount of string between them, then unwound onto the shell as the worker keeps tension on the string using his body weight. This simple type of spiking horse can easily be implemented using any two well grounded posts. A table-top model can also be constructed using carriage bolts and wood as shown in Figure 1, then clamped or permanently bolted to a sturdy table.

The two-post type of spiking horse has two advantages: it is easy to improvise or build and it allows paste to be applied to the string before spiking. On the down side, this type of horse requires the worker to first wrap string around it before spiking the shell. If the correct amount of string is not loaded onto the horse, the builder could run out of twine before the spiking is completed or, in the case that too much twine was loaded, having to throw away leftovers (given the current prices of flax twine, one hates to waste any).

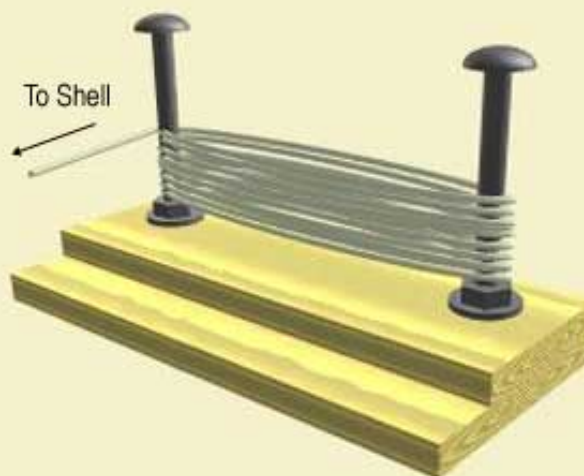


Figure 1: Two post spiking horse.

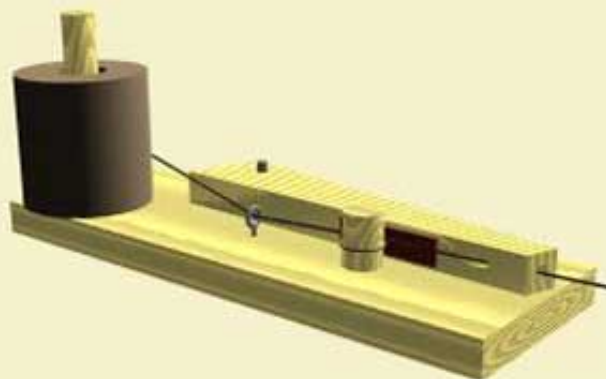


Figure 2: Arm type spiking horse.

One solution to loading the correct amount of twine is to use the shell to be spiked to measure out the twine. The builder can quickly loop the twine around the shell the desired number of horizontal and vertical passes, then wind it from the shell onto the spiking horse. Of course, this creates yet a third wrapping process just to get the string to its final destination.

Another type of spiking horse, shown in Figure 2, has the advantage of using string directly off the spool. When the string is pulled straight out from the pivot arm, it freely rolls off the spool. When the direction of tension is brought around perpendicular to the lever arm, the arm binds the string against a stop post and prevents any further unspooling.

When using this type of horse, it is first firmly clamped to a heavy bench top using c-clamps or bar clamps. The worker begins by tying off the string to the time fuse, then pulling out about ten feet of slack. The worker then backs away from the horse perpendicular to the lever arm so that the arm binds the string against the stop post, preventing any further unspooling as tension is applied. Using his body weight to keep the tension, the builder rolls the shell up in the twine as tightly as possible. When the worker arrives back at the horse, another ten feet is pulled out and the process is repeated until the shell is fully spiked. See the article on [spiking basics](#) for more details of the spiking procedure itself.

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The shape and dimensions of the spiking horse are not critical, and many variations of this design can be found in use today. While usually made from metal, the wooden design depicted here works just as well and can be made from small scraps of wood for almost nothing.

When making your own version of this horse, begin by placing a roll of your spiking string onto the board you plan to use as the base plate. Mark its center and outer perimeter so that it does not interfere with the arm. If your twine comes in a ball instead of a roll, then it is best to place the ball in a coffee can on the floor beneath where the horse is clamped to the table, then feed the string up through a hole in the can lid and to the horse.

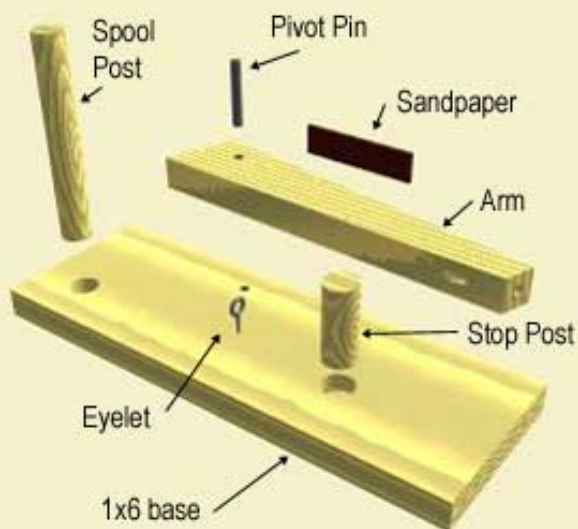


Figure 3: Spiking horse components.

Next, select a piece of wood to use as the lever arm and cut it to the general shape shown in Figure 3. It is advised to make the lever arm from oak, maple, or other hard wood since the forces exerted at the tip of the arm can be great enough to tear through soft woods like pine. The arm can be a straight rectangle or angled on one face as shown here, it really doesn't matter that much. The purpose of the angle is to shorten the length of the diagonal hole at the tip of the arm, making it easier to thread the string through it.

A pivot point is selected somewhere near the back of the arm, and either a small rod or wood screw is used as the pivot pin. A hole drilled through the pivot point of the arm is slightly larger than the pin to allow easy rotation. Finish the arm by drilling a small hole, not much larger than 3/16" diameter, through the tip of the arm such that it exists out the side facing the stop post. Making the hole too small will make it difficult to thread cotton twine through it, while making it too large will weaken the tip of the arm to where it might tear out during use.

With the arm in place, the next thing to do is select the position of the stop post. The longer the arm length is on the exit side of the stop post, the more clamping force there will be. Somewhere in the middle of the arm is good. Both the spool post and the stop post are secured by gluing them into holes drilled in the base plate.

Due to the tendency of the string to ride up and down the stop post during use, an eyelet is placed near the post to guide the string to a position level with the midpoint of the arm. Finally, a small strip of sandpaper is glued or stapled to the part of the arm that comes into contact with the stop post. This helps create additional friction against the string and further reduce any chance of slippage during the high tension of spiking.

The spiking horse must be firmly mounted when in use. If a heavy workbench is not available for this

purpose, it may be fastened sideways to the wall with the arm pointing upward between 30 to 45 degrees. When threading the string onto the horse, it goes through the eyelet, one turn around the stop post, then through the hole at the end of the arm. 🔥

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