

# How to build a Hand-cranked Roller Cotton Gin (For less than \$20 in materials)

By: Tom Austin

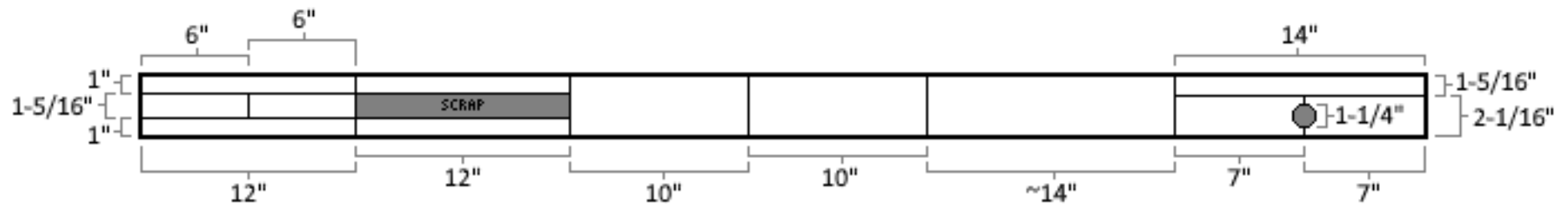
## Materials Needed:

	PRICE
- 1x - Pine Board, 2in x 4in x 6ft	~\$3 for 8ft
- 1x - Hardwood Dowel, 1-1/4" x 48in	~\$4.50
- 1x - ~48in of string (paracord, shoelace)	~\$2 for boot laces
- 19x - #8 x 3in wood screws	~\$7.50 for 1lb
	~\$17 total

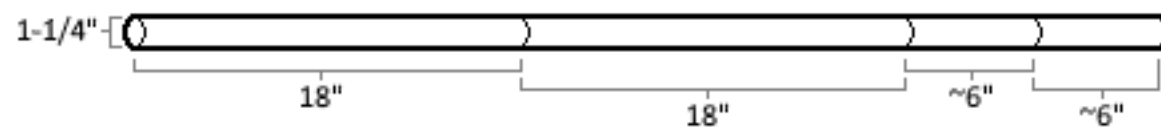
## Tools Needed:

	<-OPTIONAL TOOLS->
- Power Drill	- 4in Clamp
- Table Saw	- Wood Glue
- Miter Saw	- 1-1/2" Hole Saw Bit
- Tape Measure	- Speed Square
- 1/8in x 4in Drill Bit	- 80 Grit Sandpaper
- Screwdriver Bit	- Pencil

## Part Dimensions and Cuts: 1-1/2" x 3-1/2" x 72" Pine Board, Actual-size



## 1-1/2" x 48" Hardwood Dowel



The ~ symbol denotes a dimension that only needs to be approximate.

Dimensions do not include 1/8" cut reliefs, measure cuts individually.

## Cutting Directions:

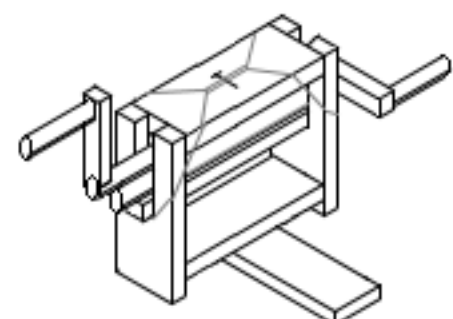
- Miter Saw: Cut the dowel into two 18" and two 6" sections.
- Miter Saw: Cut the board into two 12", two 10", and two 14" sections.
- Table Saw: Rip a 1" strip off one side of each 12" board.
- Table Saw: Rip a 1-5/16" strip off the side of one 14" board and off the inside of each 12" board.
- Miter Saw: Cut one of the 1-1/4"x12" boards in half into two ~6" boards. Discard the other 1-1/4"x12" board.
- Hole Saw: Mark the center of the 2-1/16"x14" board and drill a 1-1/4" hole through it. (Optional Step)
- Miter Saw: Cut the 2-1/16"x14" board in half into two ~7" boards.

## Assembly Directions:

(Before driving any screw, drill a pilot hole with the 1/8"x4" drill bit to avoid splitting)

- Sandwich one 1-5/16"x6" board between a set of ~1"x12" boards, cut sides facing each other. Align the boards flush on the bottom, clamp, and assemble with two screws. This is a "support". Repeat to make the 2nd support.
- Center one 10" board on top of the 14" board flush with an end. Join with two screws to make the t-shaped "base".
- Join the two supports to either end of the base with 2 screws each. Use an 18" dowel to align the supports. Make sure the 10" board on the base is facing up and you screw into this board.
- Mount the other 10" board flush to the top of the supports with 1 screw per arm (4 total).
- Screw through the 2-1/16" "arm" into a 6" dowel "handle". (Use the flat end of the arm.) Repeat for the 2nd handle.
- If you did not use a hole saw on the arms, screw through the other end of the arm into the end of a 18" "roller". If you used a hole saw, screw through the side of the roller into the arm inside the cut. Repeat for the 2nd roller.
- Slide the 1-5/16"x14" board through the supports. Slide in the the two rollers, one handle on each side.
- Wrap the string around the supports below the "roller-stack" from last step. Hold the loose ends together, grab the middle of the string on the other side, and lift up roller-stack. Tie the loose ends leaving only enough slack in the loop to overlap the two sides of the string on top of the Gin. Slip a screw between the overlap on top of the Gin and twist the strings together to tighten the string and put tension on the roller-stack. Tighten until you cannot pull the rollers more than 1/16" apart by hand. Adjust as needed while ginning.

## Completed Gin



H: 12"  
W: 33"  
D: 14"