

The Hirsch Angocoellum Rifle: A functional Steam/Cyber Punk Rifle

by [Kaelessin](#) on January 2, 2009

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Intro: The Hearsch Angocoellum Rifle: A functional Steam/Cyber Punk Rifle

Instructables has a huge variety of Steampunk* and Cyberpunk* Guns that are true testaments to the creative genius of their makers but I'm often disappointed that they are no more than costume pieces (even if they are truly awesome to look at). I find myself thinking "wow that's incredible . . .it'd be really cool if it worked too!" and so I set out to create a rifle that will actually fire a bullet accurately but at the same time looks really steam/cyberpunk!

***NOTE:: I do not claim to even be knowledgeable much less an expert on the steampunk and cyberpunk styles . . . I'm merely an intrigued outsider. I've always been interested in this type of stuff but in reality there are people much more in tune to this universe than me. If you're one of those people please feel free to critique my design and terminology but please remember to be constructive and follow the "be nice" policy!

Safety Note/Disclaimer I've been around power tools since I could walk and so there's a lot of safety issues that are innate to me that I probably will fail to mention. These powerful devices are extremely dangerous so extreme caution is required if you plan to follow these instructions. Never operate any of these tools without someone else present or at least within earshot. Hearing and Eye protection are a must and for heaven's sake keep your fingers away from anything sharp and/or moving!

Also, the finished product will be dangerous as it IS functional and it is up to YOU to make sure you're being safe with it.

All that aside: here's a video I put together for it . . .UPDATE: new video with better editing, more shots, and a more suitable song:



Image Notes

1. empty?!

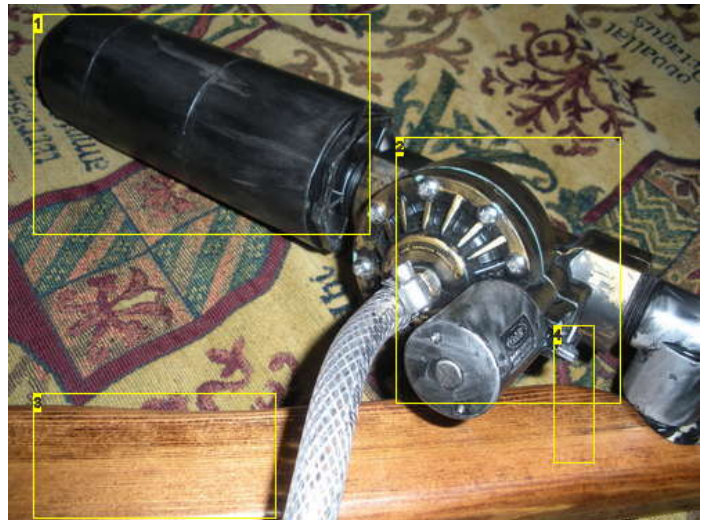


Image Notes

1. compression chamber
2. differential pressure activated triggering system . . . aka a modified sprinkler valve
3. nice to hold in your hand!
4. this knob provides a nice feature: it opens the valve manually and allows any excess gas to escape which makes sure no pressure is in the tank if you don't want any!

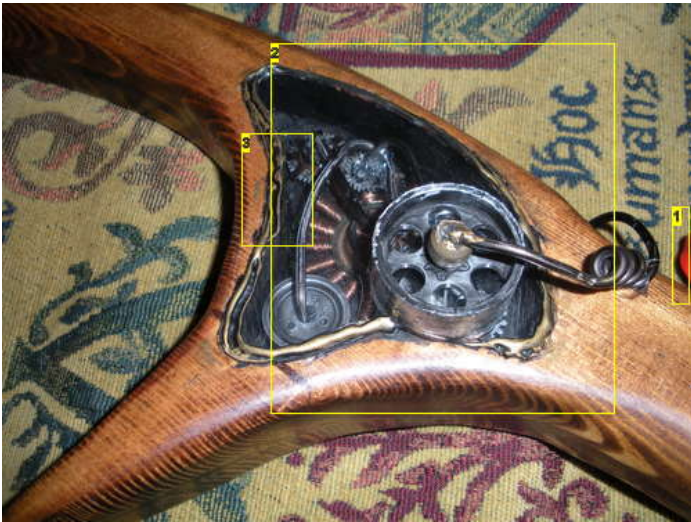


Image Notes

1. this isn't red anymore thank goodness
2. exhaust gas-powered projectile acceleration turbine
3. this is an example of where I need some more work . . . i think a smoother bead would look nicer though I may end up going with a riveted plate look some time



Image Notes

1. optically driven trajectory rectification apparatus



Image Notes

1. mmmyssss the business end

step 1: The Bowels of the Beast

*And lo the beast turned its hideous face unto me
and unleashed its swift and horrible fury*

Okay so the guts of this thing are really straightforward: it's basically a spud gun and there's a lot of instructables and other online resources that tell you how to make this so for mine I will be very brief and quite vague . . . this part of the instructable is not sufficient for a first timer to create a spud gun but should be enough for someone who's got a little experience.

Parts:

- 2" PVC end cap
- two 2" PVC couplings
- a section of 2" PVC for attaching the above
- 2" to 3/4" PVC reducer
- 3/4 PVC nipple
- 3/4" Solenoid Automatic Sprinkler Valve
- 3/4" PVC Male to female threaded 90 degree elbow (both ends threaded)
- 3/4" PVC Male to female threaded 90 degree elbow (only male end threaded)
- 2 foot 3/4" PVC Pipe(longer is possible but I liked the look of the 2 footer)
- PVC primer and Cement (yes of course it has to be PVC cement not ABS)
- a roll of teflon tape
- brass 1/4" shraeder valve (home depot failed here but ace had this)
- Two brass 1/4" hose barbs (one end barbed the other threaded)
- A Blowgun (the compressor type not the Amazonian)

http://www.instructables.com/id/The_Hearsch_Angocoellum_Rifle_A_functional_Steam/

- small hose clamps
- 2' section of pressure rated 1/4" Inside Diameter Hose (Homedepot failed again but ace had this)

Tools:

- a vise is useful for holding things still
- a hand saw
- Crescent wrenches the right size to turn the barbs and shraeder valve
- a tap set (optional but really useful)
- a drill and assorted bits
- screwdriver (though a screwgun is quicker)

Take your end cap, couplings, 2" pipe, and reducer and cement them together. Wrap the nipple in teflon tape and screw it into the reducer. Make sure the seams are as small as possible so that the compression chamber looks like a tank instead of a section of piping. Drill a hole near the top that goes through 2 layers of PVC and tap the hole for your shraeder valve. Wrap your valve in teflon tape and screw it in; the wrenches help a lot here.

While that's drying go ahead and unscrew the solenoid from your sprinkler valve, unscrew the top and open the valve up. Inside you'll see a rubber diaphragm. Off to one side of it you should see a little plastic spike with a hole in it. carefully remove the valve and take this spike out from the other side. If you're inquisitive like me go ahead and play around with the valve to make sure you fully understand how it works.

Now there's 2 types of valves out there: one type has a guide rod in the middle of the diaphragm and one does not. If yours does then you'll need to drill off to one side. Mine did not so now I drilled a hole through the middle of the top and tapped it for one of the barbs. Wrap a barb's threads in teflon tape and screw it into the hole with the wrench. Don't screw it in so far that it interferes with the diaphragm or you'll get a weird honking noise every time you fire it. I sorta liked this accidental honking so I left it in (see video). Now your sprinkler is modded. You can also buy a pre-modded one from a couple of online stores but where's the fun and learning in that!?

Take your modded valve and screw it onto the other end of the nipple (with teflon tape) making sure the arrows on the valve point FROM the tank TO the other side(barrel) screw your elbows together and into the other end of the valve and then insert your barrel. I had an iron sight from an airsoft sniper rifle but since the rifle has a scope I never put the sight on. I applied this now for aiming and coolnes' sake. Remember steampunk modding is all about found objects! But making a sight from scratch is possible too with a bit of effort.

The other barb goes into the back end of the blow gun(more teflon).

The NEXT DAY (pleas DO wait for your cement to dry completely) I put the hose onto my valve and blowgun to test the thing out and you can see the completed but unpainted assembly in the pictures.

If this is your first spud gun these instructions are certainly inadequate but fear not! Spudfiles has a good tutorial on the valve mod with discussion and troubleshooting and this site has plenty of other tuts on the subject.

HOW IT WORKS:

If you're curious, the valve has 2 chambers in it . . .one above the diaphragm and one below. The diaphragm has a hole that lets both chambers share equal pressure and so the center of the diaphragm (held by a spring) presses on the outlet keeping it sealed. when the blowgun is released the pressure from the top half exits faster than the small hole in the diaphragm will allow the tank pressure through and so we end up with a massive pressure difference very quickly. this pulls the diaphragm up and the pressure exits through the previously blocked hole and out the barrel. this all happens faster than greased lightning and so much more energy is conserved than if you use a simple, slow ball valve. This conservation leads directly to superior performance.

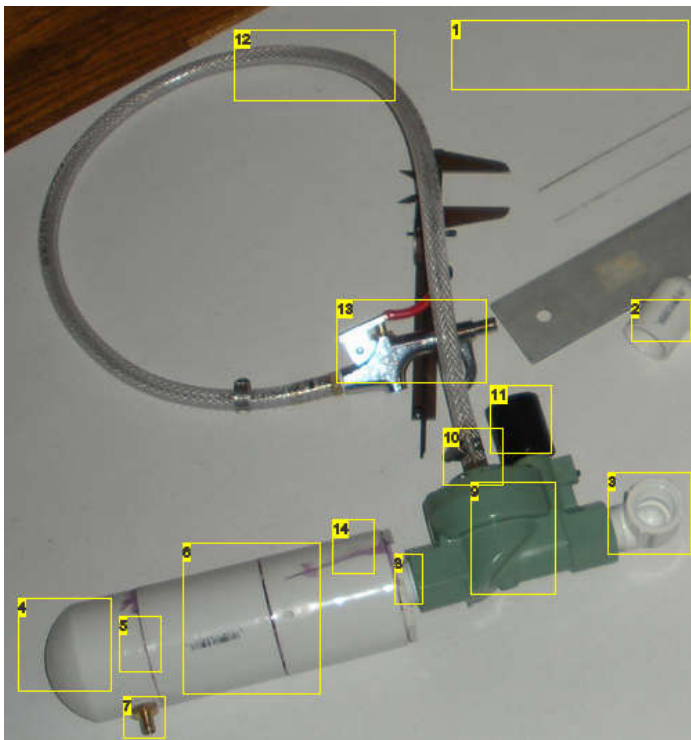


Image Notes

1. I didn't bother taking a ton of pics since this part is so well-documented elsewhere . . .
2. elbow with only one set of threads
3. both threaded
4. 2" end cap

5. inside is a segment of 2" pvc
6. two couplings to make it very tank like
7. shraeder valve allows it to be filled with either a compressor or a bicycle pump teflon tape is crucial so you don't get any leaks
8. hard to see but there's a nipple here that connects the tank to the valve
9. ugly green sprinkler valve . . .but we will fix that later.
10. modded part . . .there's a hose barb threaded into the cap here and then a hose attached to it.
11. the solenoid of the name! It had wires running out of it and it could run the gun but is too slow in opening so I clipped the wires and am going to leave it on. You can also remove it but you need to epoxy the hole behind it shut. I also decided to leave it on since I can make sure that my tank is completely depressurized later
12. pressure rated hose
13. the blowgun trigger
14. this purple mark is the primer . . .the drippiest and stainingest substance known to man . . .thank all that is good we're going to be painting this up!

step 2: Design and Drafting

*It was thus that his diabolical plans were revealed
far too late for the petty attempts at subverting them*

Ok here's where it (hopefully) gets interesting.

Materials:

- scrap paper . . .I use old tests and homework for this since the backs are almost always blank
- large wide paper , we've got a roll of butcher paper that's come in handy for a huge number of projects

Tools

- Rulers, a short one and a really long one . . .for me a 15inch art ruler and a 48 inch drafting one were crucial
- Calculator and google (for scaling)
- Pencils
- A good eraser
- drafters brush for sweeping aside eraser bits without smearing pencil
- Black sharpie(or other permanant marker)
- completed barrel and compression chamber assembly
- calipers for measuring pipe thicknesses and the thickness of other round objects

Initially I browsed around brassgoggles and other steampunk sites to look for ideas for this rifle but nothing really make me want to copy it (not to mention I kind of wanted something completely original) so I decided to make my own design for the stock.

I knew that I wanted it to sit on top of the shoulder rather than only in front of it, I wanted the design to be sleek and flowing but not convoluted like that one by weta. So with these ideas in mind I grabbed a sheet of 8.5X11 paper and drew a scale drawing of my inner parts (not intestines but the gun part). With this on paper I placed the trigger(blowgun) so that it would be pressed from above (kind of like the guns in Mononoke Hime) behind the chamber and then began sketching possible stock designs. I think doing a scaled down illustration is crucial to the design phase so don't neglect this part or your final project will look rather disjoint and unplanned unless you're insanely lucky. Once I had a good idea of what I wanted to look like I took it to the next level and rolled out some butcher paper and drew a full size copy of the inner workings again and then drew the design onto that. Make sure at this point that everything is comfortable and within reach(like the trigger) and erase and redraw until you're completely satisfied with it. Then go over your lines with Sharpie(or other black permanent marker) but only the outside lines of the stock. This full scale draft is going to double as a pattern for when you cut out the blank of the stock so make darn sure its EXACTLY how you want it to look!

Then being careful to follow your lines closely cut out the pattern with sissors or an exacto knife.

Let those creative juices flow! but be safe . . .remember danger makes juices flow too . . .adrenaline, tears, Hydrogen peroxide . . .

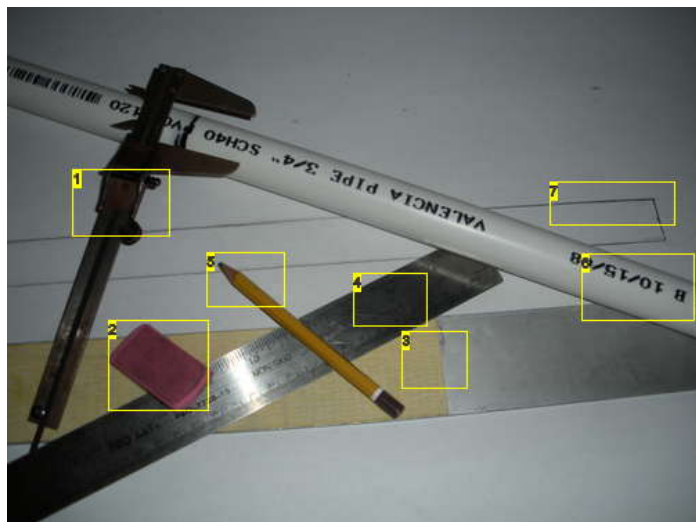
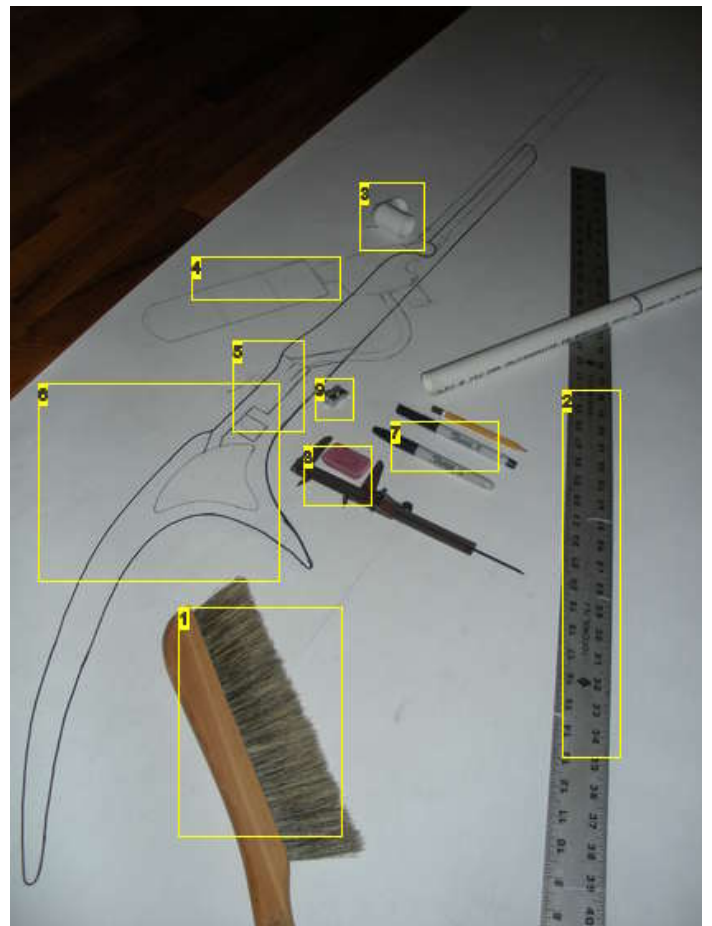
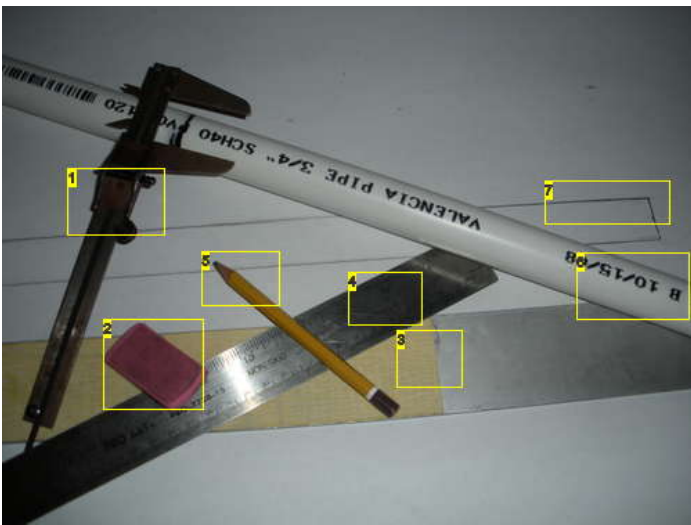


Image Notes

1. calipers for measuring pipe thickness . . .tracing round objects simply doesnt cut it
2. a well loved and oft used eraser
3. sandpaper on the back of this ruler keeps it from slipping!
4. shorter art ruler for small areas
5. sort of like using a postal scale to guess weight of a thrashing bear . . .but yes this is my drawing pencil and I wouldn't be without it!
6. barrel for reference



7. beginnings of drafting

Image Notes

1. drafters brush . . .super useful for getting eraser crud out . . .I got this one in an Asian market for real cheap!
2. Long ruler is looooooong
3. more reference
4. perfect sillouette for reference
5. note that Ive taken care to design the inner layout here as well to make sure everything is going to work before I cut anything
6. Finished design!
7. two different sized sharpies for outlining everything important
8. om nom nom
9. sharpener . . .don't forget to get a good one . . .this one's german and perfect!

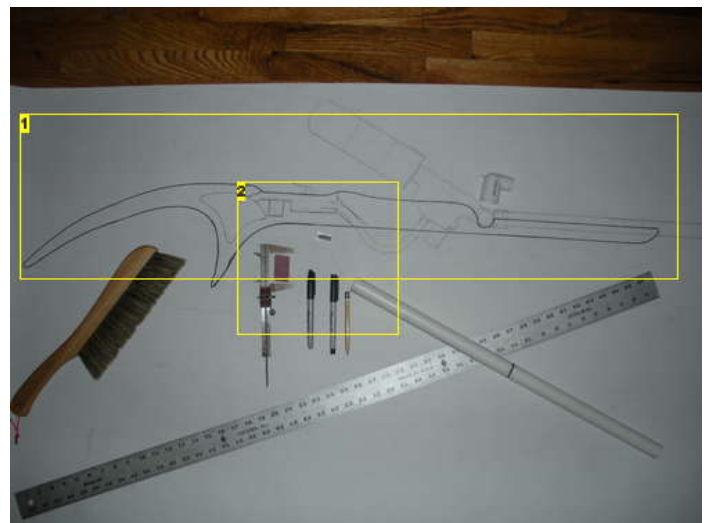
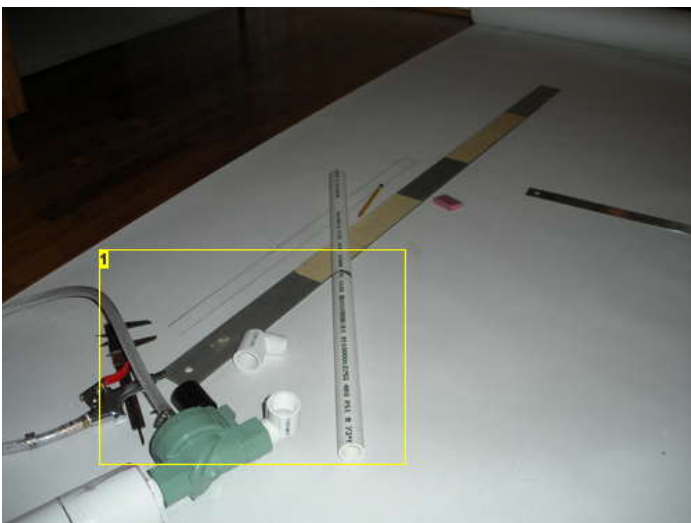


Image Notes

1. Stage 1 of design . . .begin drawing what you know!

Image Notes

1. Final product
2. hoses will run through the gun with the blowgun set into a slot in the stock for the coolness factor . . .the slots are a pain but I think really help make it look better.

step 3: Improvisation and Impatience

... or how to build a board without going to the custom lumber store and paying exorbitant rates . . . AKA it was new year's day and nothing but home depot was open
*cry

*The wheels of intuition shifted from low gear into the ideal ratio
and the produce of the fields of his mind issued forth*

Materials:

- wood enough to fit your design and thick enough to accommodate the pipe you're using as a barrel.
- little 1" sticks if you're making the board
- spray adhesive
- your pattern

Tools:

- Table saw
- Radial Saw
- C clamps (as many as possible . . .we used 12)

NOTE: Saws are dangerous make sure to keep safety as your #1 priority!

My design came out to be 46 inches long 2 inches thick and 8 inches wide (or tall if we're thinking about the final product) so I went out to find a board that would fit those dimensions . . .unfortunately the only lumber carrying store that was open and within driving distance was the home depot and unless you're building a house or something their wood selection is somewhat lacking. So with my dad and brother we dug through their paltry selection and found two pine boards free of knots(this is important since knots will make carving darn near impossible) and a couple of hard wood boards that when put together gave me the thickness I wanted. I spent somewhere in the neighborhood of \$20 for these and almost surely could have found a better deal if I was patient but that is one virtue that I lost somewhere back in 1995 . . .

Back home we cut the boards to the right size and smeared glue onto one thick one, tacked the thin ones to it (they were slightly warped) and then more glue and clamped the other thick board to them. to make sure we didn't get any air pockets we made little 1" thick oak sticks that we clamped together to help make sure everything was flat. Then came the boring part . . .waiting . . .about 6 hours. Luckily I bought paint and other stuff while out so I worked on the barrel and compression chamber assembly finishing while I waited. More on this step later.

The pictures show us (my dad couldn't help himself . . .he's more obsessed with woodworking than even I am!) building my custom blank. His company proved very handy since the end result was heavy and the gluing rather tricky. See the pictures for details of this process.

Next I took some spray adhesive and coated the back of my pattern and stuck it to the wood. this is how I've always done this sort of work and I find it works better than just drawing lines onto the wood since your pattern is high contrast and won't smear. Let the glue dry and move onto the next step!

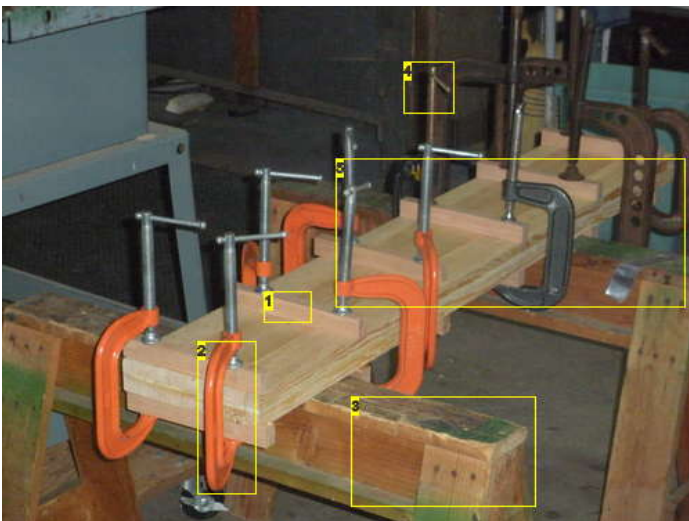


Image Notes

1. Little 1 inch thick oak sticks to make it flat
2. Plenty of C clamps
3. Homemade way to elevate projects!
4. Quick release clamps are lousy . . .dont even bother with them
5. Heavy and unwieldy . . .get help!

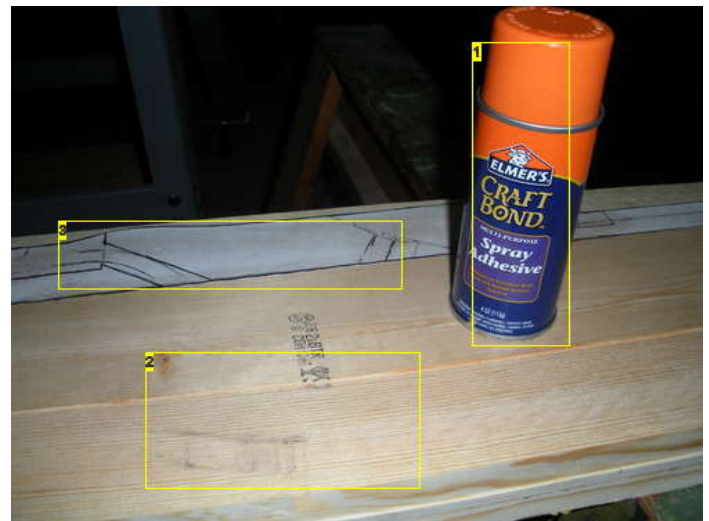


Image Notes

1. We had this lying around so I used it . . .not an advert or anything but it worked well.
2. its thinking . . .Man I am bored!
3. My pattern

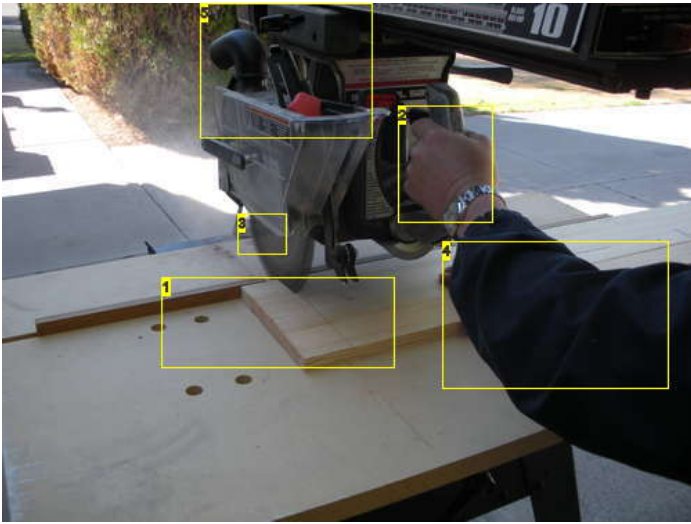


Image Notes

1. Cut each of the boards to length
2. Keep these well away from the spinning hacker of death
3. Said spinning hacker of death
4. Technically loose sleeves need to be tied back but my dad usually doesn't . . .
5. Free tools ftw! My dad's always picking up stuff that people are trying to get rid of . . .he had to assemble it but I'd say it was well worth it eh?

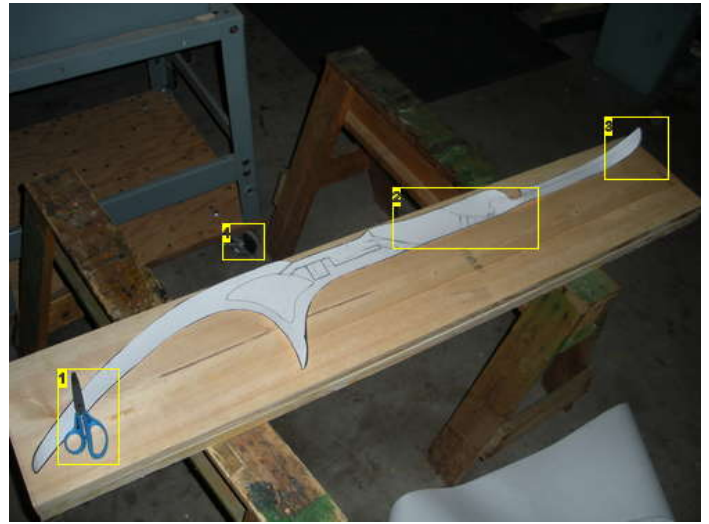


Image Notes

1. Dont be like me . . .these are way too small for this sort of work . . .
2. Pattern cut out and getting to know the wood that it's going to be spending some harrowing time with in the next step
3. a cry for help?
4. heh tools on wheels super awesome for cleanup!

step 4: Removing wood surplus (or cutting out your blank)

The whirring band of tooth-ed steel
The mechanical monstrosity's squeal
The ripping tearing rending violence of the carpenter's manic zeal

Materials:

- your blank with design pasted on

Tools:

- band saw

After waiting a loooooong time for the wood glue to get that perfect bond, and gluing the pattern on, it's time to cut it out. (I know you can't since it'll grow right back but deal with it)

I used a band saw and I'm sure it's probably the easiest tool to use . . .others will work and are less dangerous but remember the tool is only as dangerous as the user allows it to be. . .

Very carefully cut the excess wood off, following your lines to a T. When you encounter a curve, cut triangular sections out (relief cuts they're called) or you risk breaking a blade which is scary, dangerous, and expensive. Take your time with this and get it right the first time . . .no second chances with this part. If your blade is thinner than your lines then pick a side (inside, outside, or middle) of your line and stick with it . . .if you don't you'll end up with a wobbly cut and way more finishing work later.

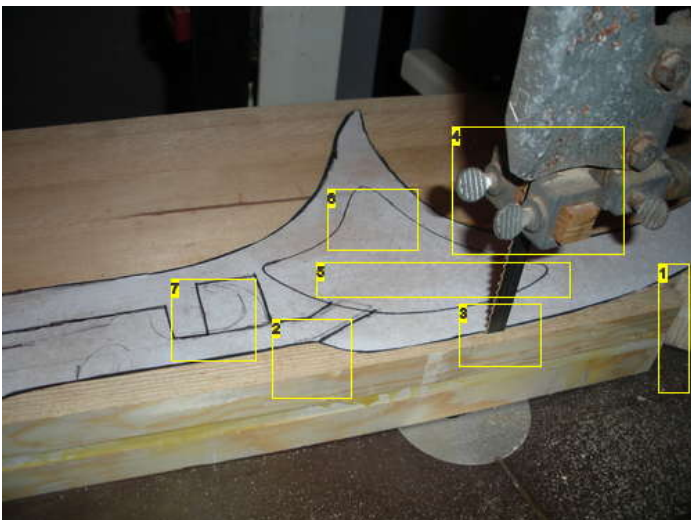


Image Notes

1. relief cut
2. definitely needs a relief cut
3. stay on the line

4. guard raised for the pic . . . don't actually cut like this.
5. keep your nose pickers away from this thing
6. this inside shape is going to be a cubby of little gizmos and other bits and bobs to complete the effect!
7. slot depths clearly marked

step 5: Slotting your cut blank

after a last look at the device she pressed into the slot it fit perfectly and soon a whir and buzz filled their ears from the workings of many tiny gears

This is possibly the most tedious part (unless you hate sanding like my friend does . . .) and the one with the most need of precision.

Materials:

- your cut out blank

Tools:

- various spade style drill bits (or the kind seen in my pictures work really well too) that match the size you need for your slot (not a coin slot thankfully)
- chisels
- mallet for chiseling
- pencil
- square
- electrical or masking tape
- drill press with hobby vise
- rotary tool and sanding bit
- safety glasses (I use paintball goggles since they also keep dust out of my eyes)

The first thing you want to do is get the width of your elbow and drill a hole where it's going to stick out deep enough to center your barrel in the channel we'll cut later. To do that we need to know where the center of the stock is so measure the width and mark the center in at least 3 places and then draw a dark pencil line down the whole top (or at least wherever any cuts, slots or holes will be). Next drill the hole for the elbow but to keep it looking nice don't go all the way through.

After this place marks along the top where depth differences occur for the trigger slot and where it begins and ends. then connect these vertical lines with horizontal ones centered over the middle line and equal to the width of your blowgun.

Darken the resulting box and get a drill bit the right diameter to match the width of your slot. Take your tape and wrap it around the bit to mark the depth you want so that while drilling you can stop when the correct depth is reached. Clamp the stock in the drill press and line up the bit and drill a line of connected holes at the right depth to make your slot. Then don some goggles instead of safety glasses (to keep dust out of your eyes) and whip out the ole demmel tool and take out the little ridges left by the roundness of the drill.

The fit can easily be checked by inserting the blowgun . . . if it's too tight sand out some more!

My design included holes for the tubes to run through the gun so I drilled these by hand at this point.

After this slot was finished it was time to cut the little cubbies for my little gizmos and fiddly bits. I used a huge bit to get most of it out and then consecutively smaller ones to go out to the sides (round would have been easier but I wanted a shape that complimented the shape of the gun) and dremmel out the new resulting ridges and smooth the sides . . . this will take a long time so be patient and get it right!



Image Notes

1. cest tres chic non? actually this is to keep that super fine dust out of my poor eyes . . . normal safety glasses just dont cut it!
2. dust example 1

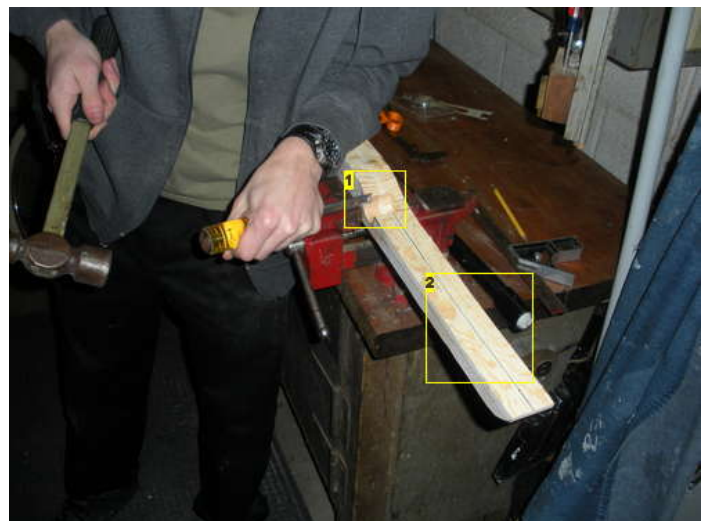


Image Notes

1. rounding out the sharp edge the drill left . . . I know . . . dremmel would have been better
2. make sure that center line is dead on!

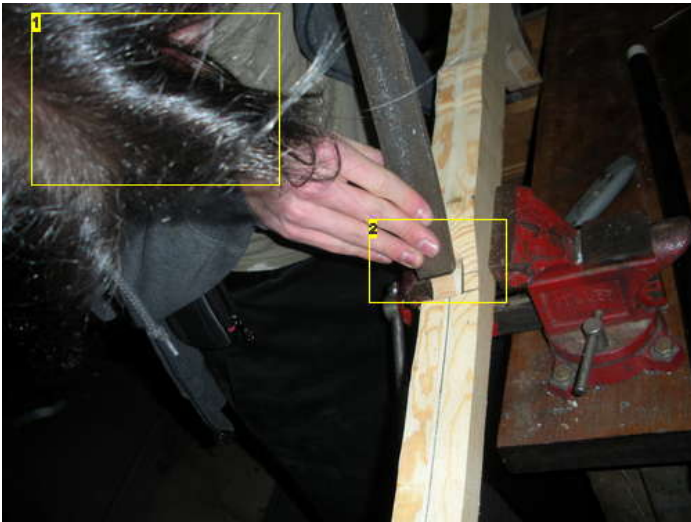


Image Notes

1. apparently my brother cant take a pic of me filing without featuring more me than the file . . .
2. still havent thought of my dremmel yet . . . its just starting to come to me though



Image Notes

1. measure carefully with a square and make your marks!

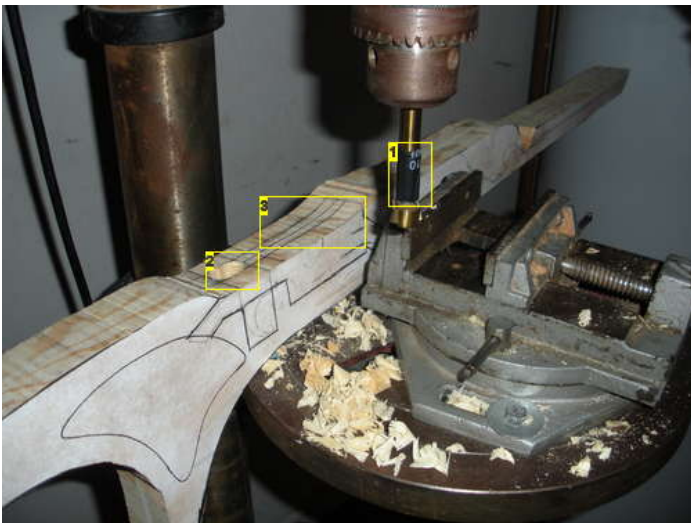


Image Notes

1. tape to mark the proper depth
2. first couple of drillings done
3. see the pretty box? this will help you get everything lined up

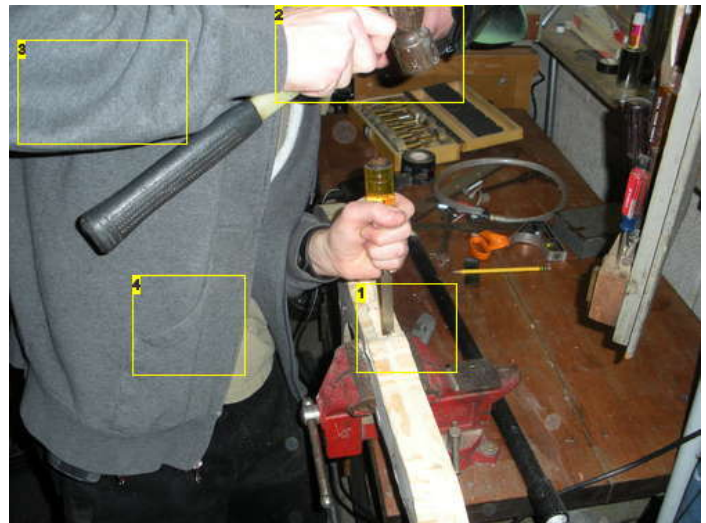


Image Notes

1. good for corners that you want square
2. Im holding it up here since I'm trying to be gentle on the chisel . . . if I wanted a good whack then hold it properly.
3. brrrr . . .our garage was surprisingly chilly!
4. the first place to check when something goes missing . . .believe me this will save hours



Image Notes

1. POUND IT! lol kidding . . . light taps are much more effective and way safer

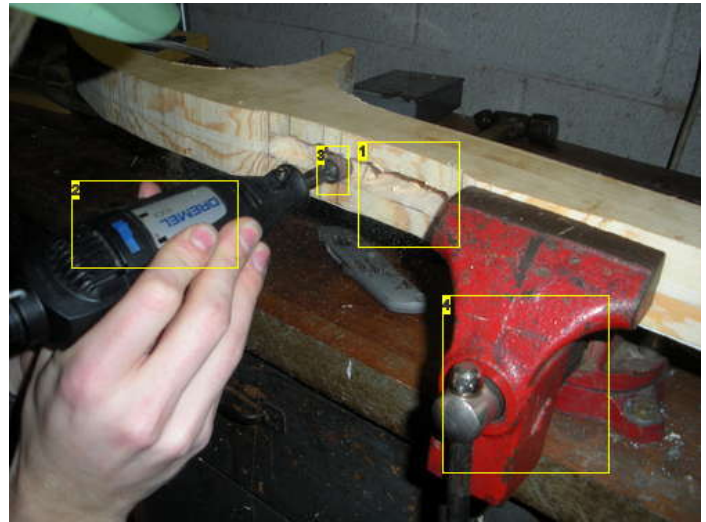


Image Notes

1. you can see the unevenness . . . smooth that out real nice like!
 2. not product placement . . . it was just the cheapest one there . . .
 3. sanding bit
 4. HOLD STILL DANG IT!

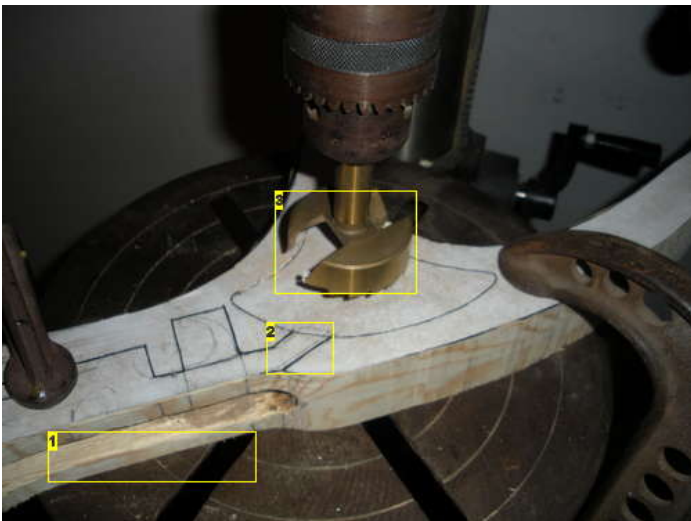


Image Notes

1. pretty and nice finished slot
 2. will drill through slot into here
 3. awesome bits for this sort of work!

step 6: Cutting your barrel channel

as they peered across the chasm at each other pure hatred simmered betwixt their eyes as bolts of Thor's smithy

erm not that kind of channel . . . a barrel channel to be precise!

Tools and Materials:

- Round bottomed chisels]
- Mallet
- 80 grit sandpaper
- A dowel or other round stick the same size as your barrel
- Rotary tool

This is the step that threw me for a loop . . . if I'd designed the gun so that the top of the barrel channel was even with the rest of the gun then I could have simply run this through the router with a 1" groove bit and called it quits but me being what I am decided that it didn't look as cool so I had to do it by hand . . . finding the right tool to do this job was interesting to say the least.

First I sanded in a line with the rotary tool so that I could use the groove to line up my barrel but then I was left scratching my head as to how to carve the rest in . . . I eventually bit the bullet and took out the old chisels and mallet and lo and behold . . . someone had damaged the chisels so badly (seriously the edges were shaped like extreme W's) that I wouldn't trust them to cut butter . . . I gave them a new edge on the grinder and went at it . . . You have to be extra careful here and make sure you are completely aware . . . this is not a job you should do when tired since a razor sharp chisel is no joke and one wrong angle will send it skipping off the piece. Bit by bit take out the extra wood and occasionally check the depth and width (as well as roundness) when you get pretty close wrap some 80 grit sandpaper around the stick and push

http://www.instructables.com/id/The_Hearsch_Angocoellum_Rifle_A_functional_Steam/

it along the chanel over and over until it's nice and smooth as well as being the right depth . . .this step took me about 2 hours including the sharpening so it's quite a commitment! This will really show errors so make sure you work slowly and carefully.

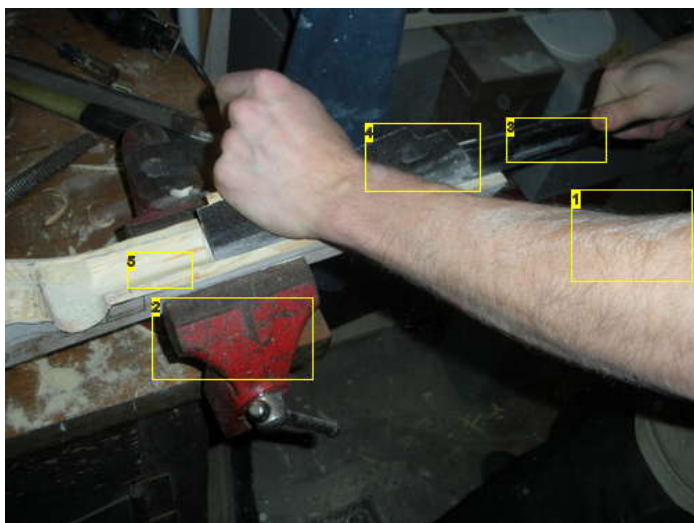


Image Notes

1. probably the dustiest part of this step . . .not as bad as shaping will be though
2. make sure it's real steady
3. old spare piece of pvc I had lying around
4. 80 grit sandpaper wrapped tightly
5. coming along nicely!



Image Notes

1. creating an initial groove for the chisels to follow . . .make sure it's dead center!
2. marks to remind me where the other part of the 90degree elbow will be

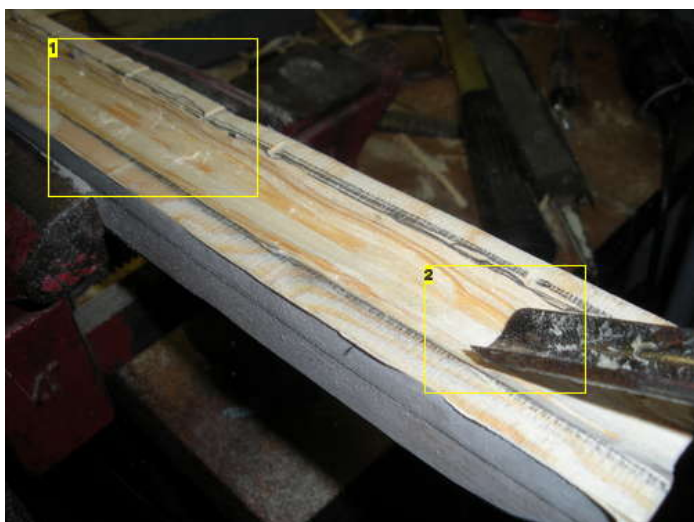


Image Notes

1. roughly hewn barrel chanel . . .not done yet! keep at it though eventually you'll be done!
2. reconditioned chisel . . .someone had dropped this one on concrete . . . the edge was as wavy as a tsunami but a bench grinder and some elbow grease came through

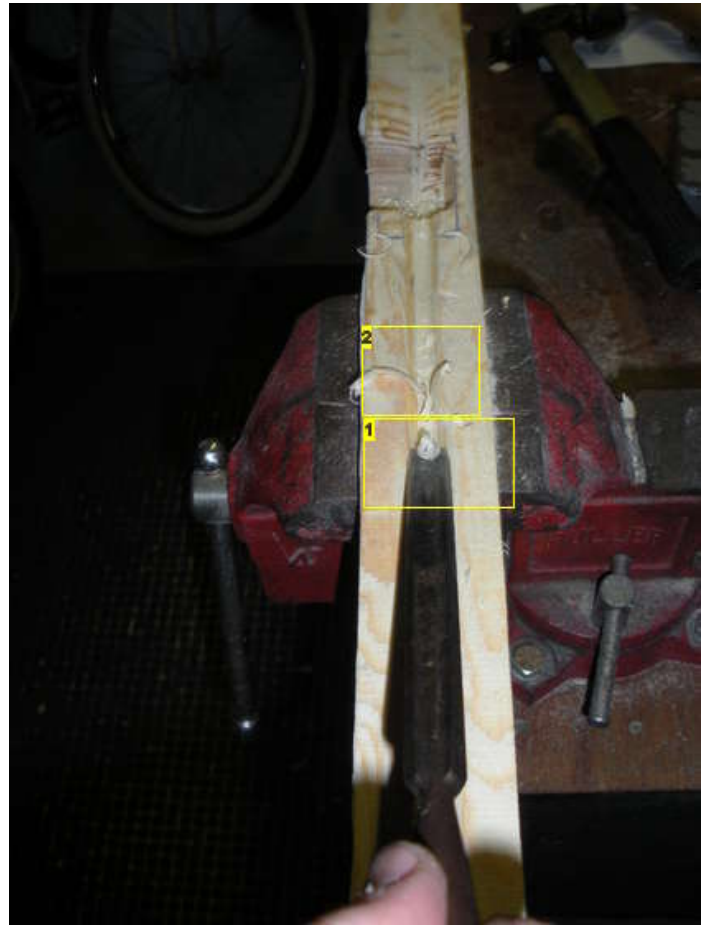


Image Notes

1. start with a narrow chisel . . .then break out the big guns
2. these shavings always strike me as coolis it just me?

step 7: Shaping and sanding

the dim beams of desperate light, fighting with great determination through the minute cracks in the shutters, barely illuminating the object that lay clamped to the bench were still enough for the trespassers to understand that they had encountered a thing which would have been better left undisturbed. It's rough unfinished shape filled them with unease; then they noticed the diminutive creature in round spectacles holding a pointed rasp rather threateningly . . .

Tools and Materials:

- Sandpaper 80 grit and up
- Orbital Sander w/ a range of 100 to 180 grit sandpaper
- Rasps
- Your stock

Now for what's possibly the longest process . . .giving that rough hewn piece of wood a nice shape that's comfortable to hold . . .

The first thing you want to do is take the rasps (a file will work too but will take much longer) and bevel all of the edges and give the underside of where your barrel channel will be a round edge. Remember that the rasp will tear the living daylight out of your wood but this is OK since we'll fix that by sanding. Also bear in mind that you want this to be comfortable. I cut into the round edges a bit to make it fit my shoulder well and narrowed out the area under the trigger where my hand is going to be. It's hard to be too specific since the actual shaping of the stock will depend very much on the design you've made . . .If you need pointers then I'd suggest looking at real gun stocks(if you don't have an old fashioned rifle then google should come to the rescue) and imitating their edges etc. Remember . . .when using rasps, files, sandpaper, and the like always (as much as possible) go with the lines of the grain!

Once you're happy with the way it feels(ignoring the fact that it's rough) it's time to whip out the orbital sander. Put a 100 grit piece of paper on it and clamp the stock in a vise (unless it's already in one) and carefully smooth out all the unevenness. Every once in a while check the paper . . .it will fill up with sawdust and needs to be taken off and whacked against something hard to clear it out. After a while, the paper is useless even after whacking so simply slap a new one on. Keep sanding until all the gouges from the rasping are gone and then move to a higher grit paper and repeat. Once you've worked your way up to 180 then you can probably call it quits but if you'd like to go higher then feel free. A thing to notice is that after you start smoothing the thing out your vise will begin to leave ugly marks. At this point it's advisable to get a thick towel or other cloth to wrap the piece in before clamping it.

A friend of mine absolutely hates this sort of work(sanding and whatnot) for some reason or another . . .probably finds it tedious but for me it's the best! You can take that ugly hunk of wood and give it a nice shape and really transform the way it looks! Whether you love it or hate it keep chugging along (and keep an ice cold beverage in a resealable bottle handy . . .that dust dries you out like no other!)

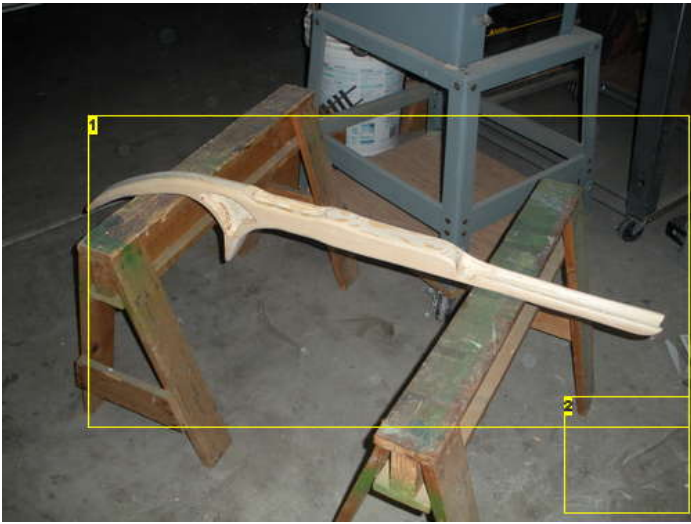


Image Notes

1. whew done shaping . . .that took forever! sooooo much better than last step though eh?
2. THICK dust on the floor . . .and it's fine enough for me to leave footprints!

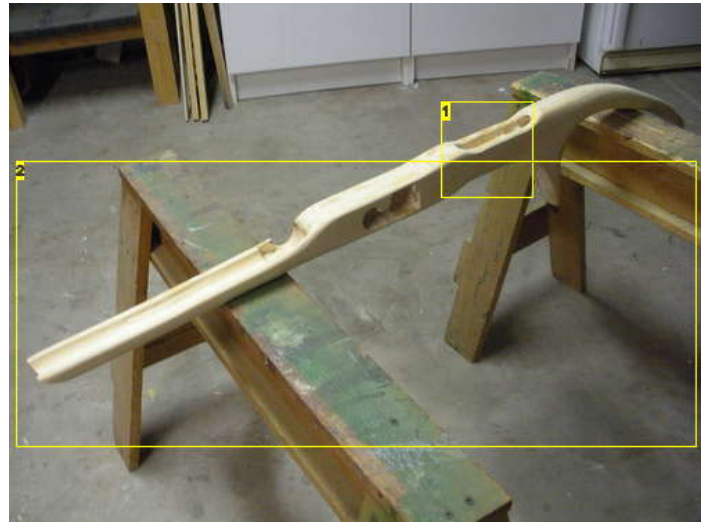


Image Notes

1. notice it's slightly narrower here. . .this is where my hand will go so I've got to account for that
2. the other side

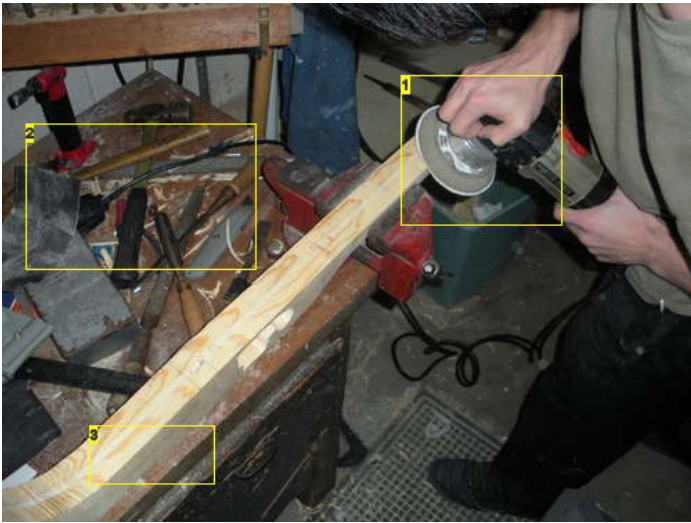


Image Notes

1. takes hours of sanding time out!
2. I sure do leave a lot of tools lying on the bench don't I?
3. ugh ugly sharp rough and uncomfortable angles

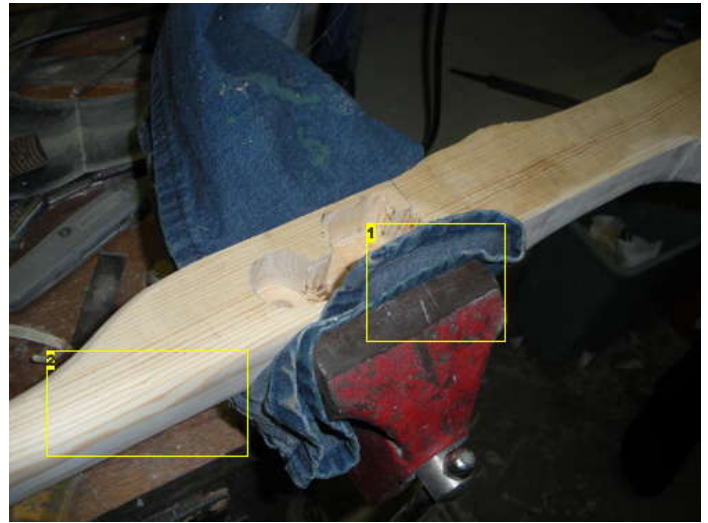


Image Notes

1. anti marr device
2. ahhhh nice and smooth and rounded



Image Notes

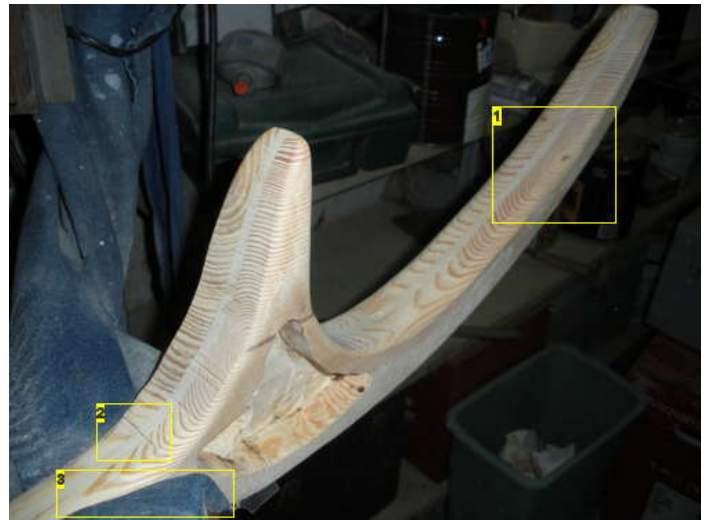


Image Notes

1. still flat here but it's coming along

1. ah yessss it's beginning to take shape
2. this dark line was a rough spot left from the band saw . . . these are a pain to get rid of (especially on an inside curve) so try to minimize the amount you back up and then begin the same cut
3. thick denim that I use to keep the vise from marring my work

step 8: Finishing the stock and a bit of paint

shortened breath came more and more difficult as she raced for the door . . .the port seemed to bounce wildly as she tumbled arse over teakettle down the corridor. Not even daring to look back, she ran as a sprinter in the lead of a race; but in this race the loser would be slain!

Now the project is really starting to come together but who wants a bare piece of wood?

Tools and Materials:

- Lots of paper towels
- Flat black brush on Paint
- Heavy duty hand cleaner
- Wood filler
- Paint thinner
- Some sort of sandable wood sealer
- Your choice of stain . . .I used a minwax mahogany stain
- Your choice of finish . . .I chose minwax Polyurethane
- Paint brushes
- A standard screwdriver for prying open cans of stain and finish
- A rubber or rawhide mallet for closing them without damaging the lids
- A piece of soft cloth and a plastic bag for polishing the finish

First look at the piece and find any holes or gouges you don't want (you should have gotten rid of them all in the sanding step but invariably a couple make it through) and fill them in with the wood filler and let it dry. Sand off the excess.

After all that sanding and carving there's going to be a TON of sawdust in your stock even if it doesn't look or feel like it so the first thing you do is spray it off with a compressor hose if you've got one or at least blow it off and then moisten a clean rag in mineral spirits and wipe it down to remove the rest. Let the Mineral Spirits evaporate and then open your can of stain . . .stir it well and dip a folded paper towel in it, let the dripping stop and wipe the stain onto the wood following the grain pattern. Wipe off any excess and let it dry (shouldn't take too long as the wood soaks a lot of it up). If you'd like it darker/richer give it another coat at this point.

Now open the can of sealer, stir it, and apply it evenly like you did with the stain but with a new paper towel of course. This takes a while to dry so I'd work on something else for a while and come back. Once it's dry give it a light sanding with high grit sandpaper, dust it off with a cloth and give it another coat. Do this at least a couple of times.

Once the last coat is completely dry and sanded and wiped then open up the Poly(or whatever finish you chose) and stir it as well. Apply it just like the other two. After the second coat instead of sanding take an old tshirt or other soft cloth and buff the finish until it's shiny (after it's dry of course). After the third coat use the plastic bag. You can keep applying coats until it looks how you want. I used 2 coats of stain, 2 coats of sealer, and 3 coats of poly.

Now open the paint can and brush a coat of black into the cubbies you made earlier if you made any. make sure you get all of it. Once it's all dry and good then you can start assembling the rifle!

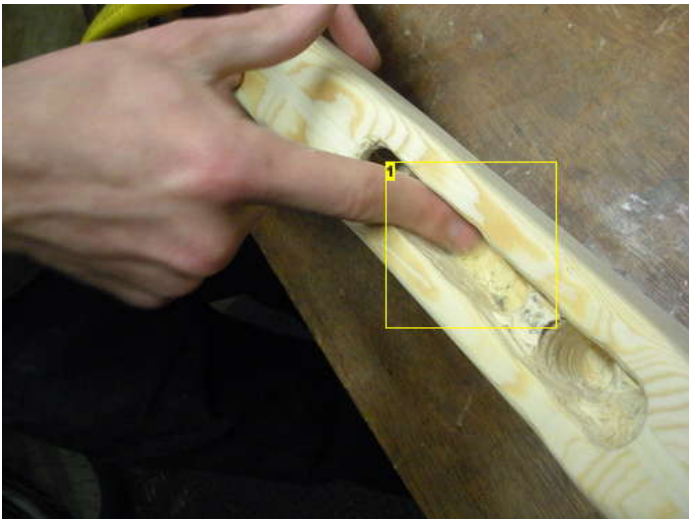


Image Notes

1. those drill bits leave holes in the center that I wanted to fill in

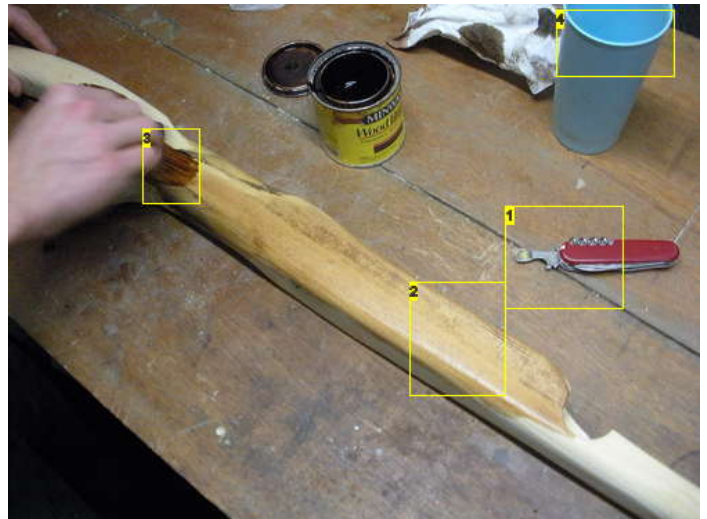


Image Notes

1. heh best standard screw driver ever!
2. initially I tried an oak one . . .way too light
3. mahogany . . .much better!
4. no more dust so the icewater doesn't have to be sealed anymore!



Image Notes

1. coat one on the top is nearly done
2. additional tests

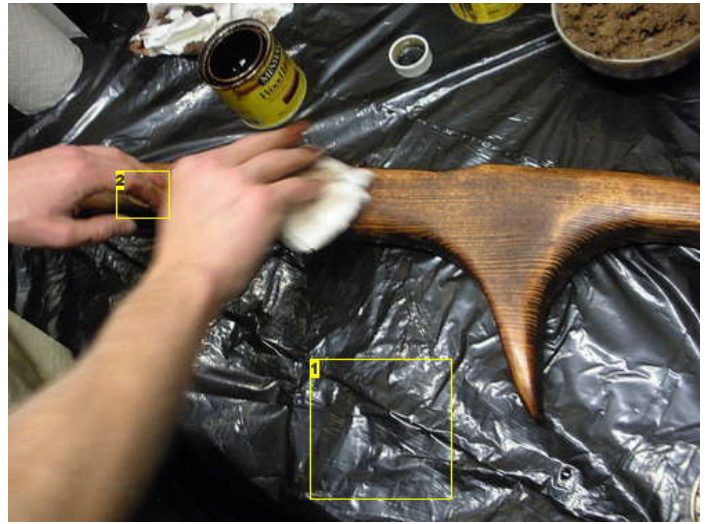


Image Notes

1. didnt want the bench to be stained so I covered it with plastic
2. this right here is why you need the paint thinner and heavy duty hand cleaner



Image Notes

1. sealed!
2. fine sandpaperthis is 600 grit

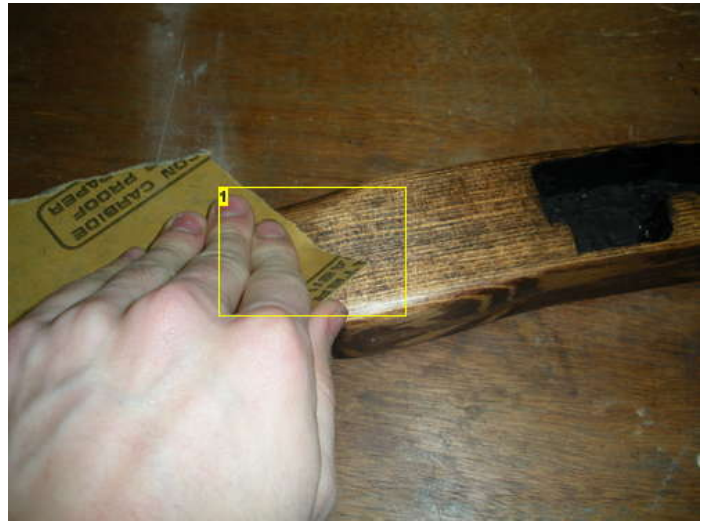


Image Notes

1. sand! sand! sand like you've never sanded before! Okay well actually just do it lightly enough to take the shine out . . .I know it kills you right?



Image Notes

1. great stuff!! when coupled with paint thinner there's no polyurethane that can stand!



2. sorry about the blurry pic . . . I had my brother take it while I was washing my hands and he doesn't quite understand how the whole focus thing works . . .
3. Shakes fist at the router table that I couldn't use for the barrel channel



Image Notes

1. what can I say?! I like making things!
2. heh full of dead drives . . . and empty bags of chips!
3. after one coat of poly . . . it was too wet outside to dry it there . . . keep a window open and a fan on if you dry it inside . . . in any case this is a bad idea all around
4. hehe old ribbon cable . . .
5. gyroscope . . . worlds coolest toy!

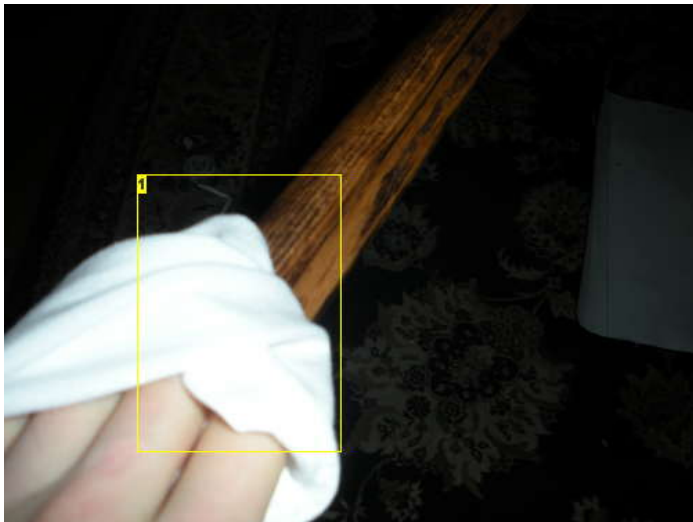


Image Notes

1. old tshirt . . . buffin time!



Image Notes

1. compulsory. . . and needed
2. black as a witches heart!

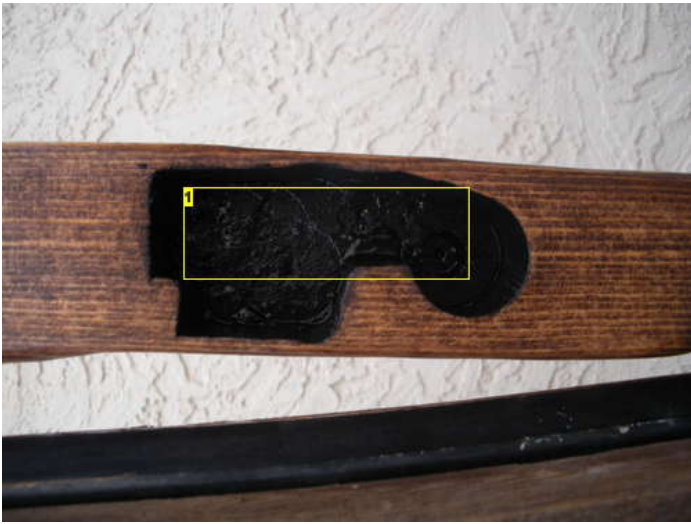


Image Notes

1. gnarley eh? it's a good thing we'll be filling it with goodies!

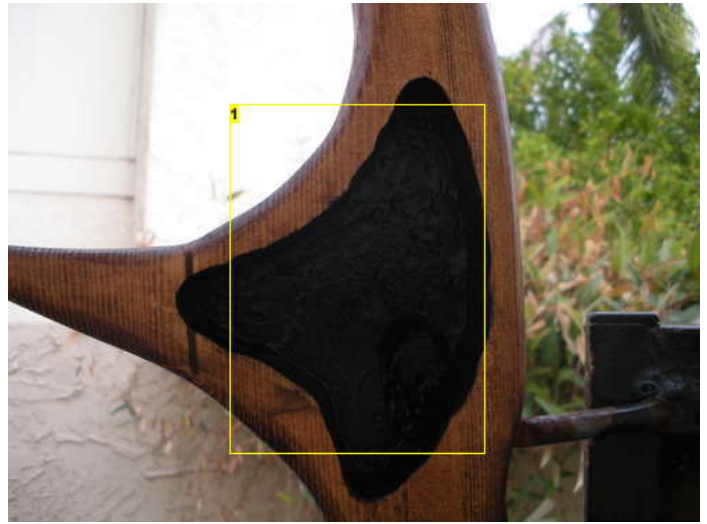


Image Notes

1. also gnarley . . .and also soon to be filled with goodies!

step 9: Painting the Plastic

*With each additional depression of the red button, the once unsightly hull began to take on a beautiful appearance
With each swipe with the polishing cloth the metal begins to show through the years of grime and neglect*

Materials:

- Black Flat Spraypaint
- Clear Matte UV protectant spray acrylic (glossy finish will also look nice for metallic surfaces since it's shiny)
- Black flat brush on paint (for tiny places that refuse to be sprayed)
- Electrical Tape(or painters if you like it better)
- Fine Sandpaper
- cardboard and sticks to paint on
- rub N buff or other gilding stuff . . .I used antique gold and Pewter colors
- Paint thinner

Tools:

- Paintbrushes
- Plastic bag

This part is a lot of fun and I took some tips and pointers from [this instructable](#). Check it out she really has some incredible artistic talent with those plastic pistols!

Take your plastic parts apart (except where glued or tefloned of course) and put tape over anything you don't want painted. This includes any brass parts, any exposed threads that are still needed, things like that. I used to use painter's tape but it always falls off and I end up painting something I would rather not. Electrical tape works way better for me but use what you know and love!

Sand everything that's shiny with fine sand paper to give it a matte finish. This is really important as paint refuses to stick to shiny things . . .some paints boast that they can but they're too expensive for my tastes. Dust it all off before you actually paint or you'll have more problems.

Give everything a nice thin coat of flat black paint. Do the whole depress nozzle, sweep across piece and off other side, release nozzle trick or you'll get drips and those are nasty. It's ok if your part shows through a bit, you'll take care of that in subsequent coats. Give it enough of these thin coats to make sure it's fully covered. I like taking sticks and pushing them into the grass to hold tubes and stuff but this only works for light weight things and I'm stuck with cardboard for the rest. Make sure each coat is dried properly before re-coating or you'll get "crazing" (little warped crackely bits in the paint) Once you're sure its completely dry then you can pick bugs and grass out of the thing and it won't leave much of a mark. Do this when it's wet and you'll foul the whole thing up.

Once you're done the undercoat whip out your embellishing stuffs. . . for me this is "Rub N Buff" metallic finishes. Try Michael's or other craft stores before real art stores . . .the real stores carry real leaf and that stuff won't work for our purposes. there are also other products that will probably work as well but I've not tried any . . .Stole the idea of this product from TribalDancer's tutorial.

I can't replicate her instructions as well as she did so I'll refer you to her instructable for the use of the rub n buff with a couple of tips that I discovered through using the stuff.

- Rub N Buff is soluble in paint thinner! it will help you clean brushes, hands and stuff and it's great for thinning the rub n buff for large areas if you want a dull look.
- Plastic bag works wonders for burnishing the dried wax gilding . . .learned this trick in ceramics with terra sigilatta!
- paper towel will spread and even dull the rub n buff
- a little gilding goes a LONG! way . . .she mentions this but it can't be stressed enough
- less is more . . .who wants a gun that looks too fake due to way too much gilding. . .go easy on the stuff!

After you're satisfied with the results make a wash of black paint and have at the brass fittings . . .they're too shiny and destroy the effect! the watery paint will fill in the uneven parts and make it look older. Wipe off the paint on raised areas that would receive a lot of use!

Post pictures!!! I wanna see all the cool antiquing!

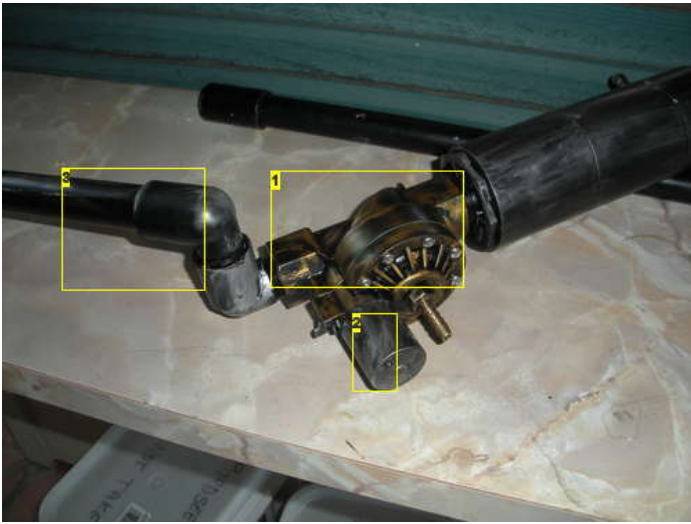


Image Notes

1. Finished Valve
2. Contrast is good! I did the solenoid silvery
3. this is the underside so it doesn't look as good since I didn't spend nearly as much time here as I did on the top

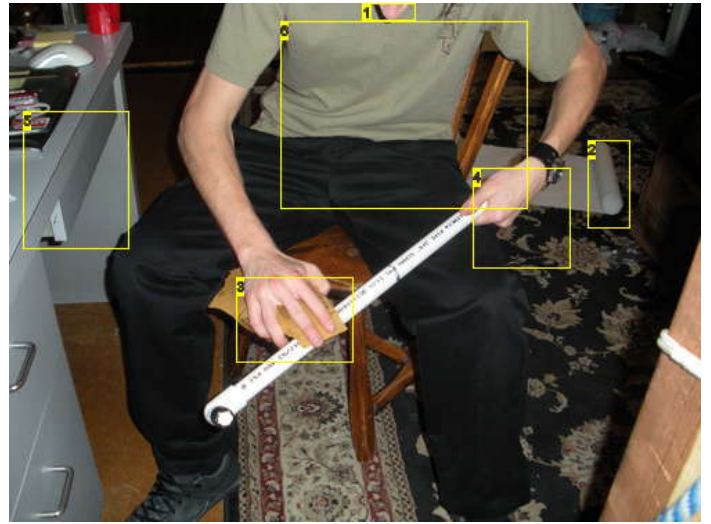


Image Notes

1. what are the chances that the photo would get ONLY my nose!
2. keep scraps! they help for extra drawings without using new paper!
3. get rid of all that shine
4. probably should do this outside . . .
5. ugly desk . . . but Im too cheap to buy a nice one and to lazy to build a really nice one . . .I've got designs kicking around though . . .perhaps I will ask my dad to show me the ropes for my b-daymuses
6. mad scientist at work . . .technically a computer scientist but we shall not dwell on this



Image Notes

1. Fresh coat of black primer . . .still wet so it's shiny . . .will be flat when done drying.

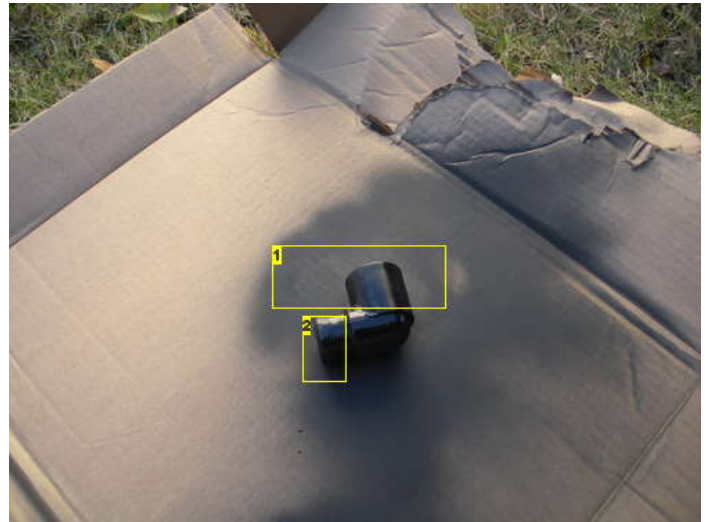


Image Notes

1. Painted Elbow
2. taped threads . . .also I stuffed paper towel in the female threads to keep them clean



Image Notes

1. Top part of the valve . . .Still needs a couple more coats



Image Notes

1. taped and papered.

2. placed on a stick to keep it upright . . .this means no having to do all the coats twice since I can spray all sides each time!

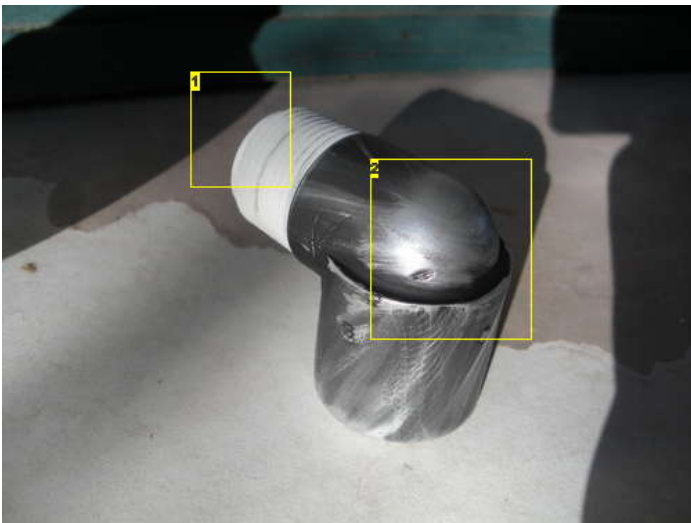


Image Notes

1. nice clean threads

2. Pay attn to high areas that would receive a lot of wear. this is sort of half way through the gilding

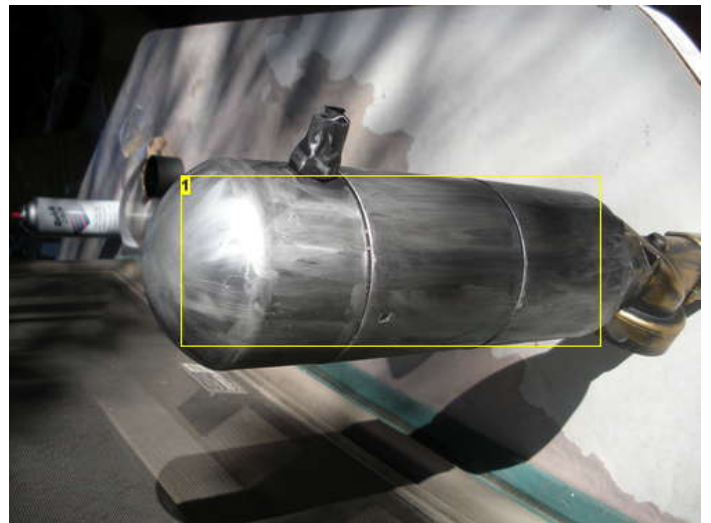


Image Notes

1. thinned with paint thinner gives the rub n buff a streaky brushed look . . .almost done here but I've got a little bit more to do.

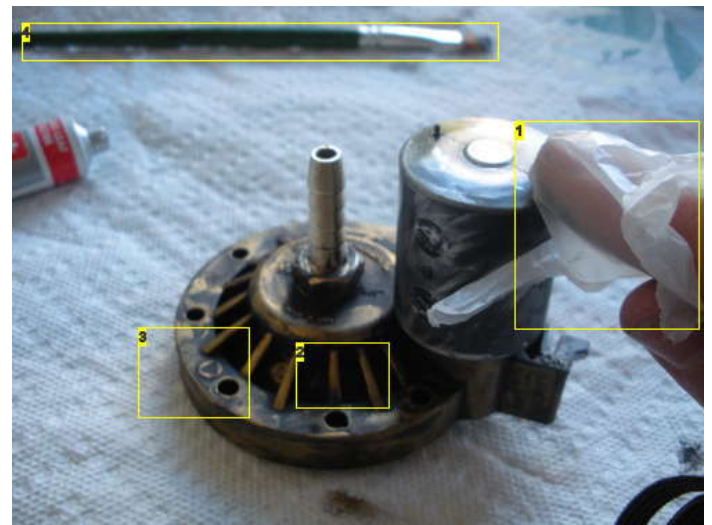
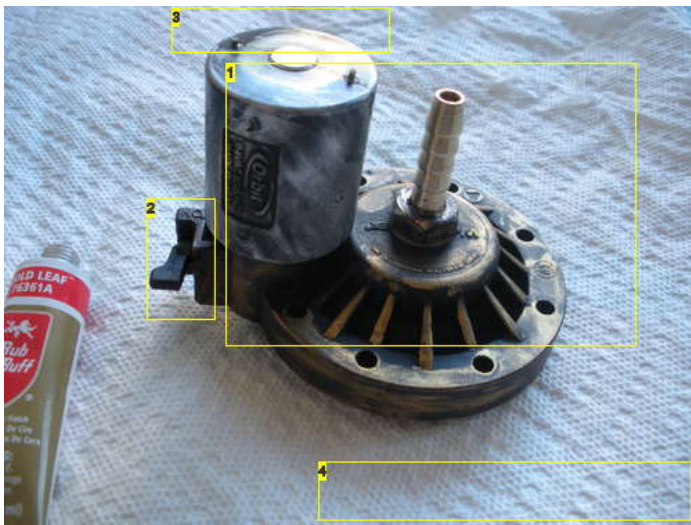


Image Notes

1. first stages
2. this part had moving pieces so it had to be undercoated by hand. this will actually still open the valve so I can make sure my tank is not pressurized! usefull eh?
3. a coil will be placed here eventually
4. keep the picnic table clean and the lady of the house won't kill you

Image Notes

1. even better than a soft cloth!
2. leave recesses dark!
3. use a light touch to pick up raised details (a bit like drybrushing miniature figurines)
4. clean these with paint thinner to get rub n buff off!

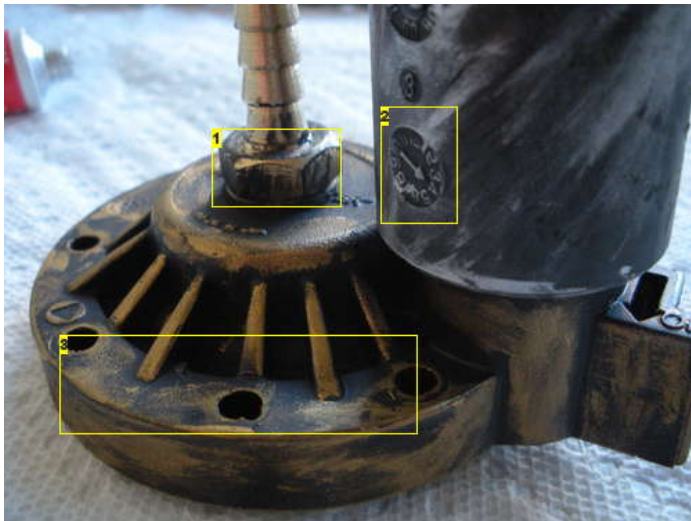


Image Notes

1. paint wash to age the shiny brass
2. cool markings that I didn't feel like sanding out . . .if you don't know what they are don't look it up . . .they are way more interesting if you don't know . . .trust me
3. still needs a little bit of work



Image Notes

1. all done!
2. here's that iron sight I mentioned earlier
3. Im thinking this needs some gadgets on this side to make it more interesting

step 10: Trouver les gizmos et arrangement

ok horrible franglais aside this is a real fun part! finding the little bits and bobs to steampunk or cyberpunk your creation . . .whichever (or both) you prefer! again . . .I'm nowhere near an expert on this genre so if I use a wrong word or term correct me but don't kill me eh?

slowly and with an almost reverent air they removed the screws from the aluminum box, pried the lid off and were met with the most dazzling cache of useful devices imaginable

Materials:

- old mechanically operated devices. . .broken computer equipment is perfect!
- electric motors that don't work
- some lego sets have great gears
- flat black spray paint
- flat black brush on paint

*rub n buff (or other gilding)

- soapy water to get grease off of things
- glue/epoxy

http://www.instructables.com/id/The_Hersch_Angocoellum_Rifle_A_functional_Steam/

Tools:

- philips screwdrivers in a variety of sizes for all the various screws
- standard screwdriver for prying
- adventurous, inquisitive, and imaginative mind . . .you've got to picture how parts will look stuck together and painted . . .

intro in plain english: . . .grab your old broken floppy, cd, and hard drives and anything else mechanical and broken and pry them open. You'll see all sorts of wonderful gizmos that work great for this type of thing!

Be careful! the casings are almost always sharp and it only takes one slip with the screwdriver to give you half of a stigmata.

Don't use good working parts since they're useful to someone . . .there's plenty of people in need . . .

Some of my favorite items that can be found:

- Electromagnetic armatures(they're those flowery things with tons of copper wire wrapped around little arms) from any motors . . .floppy drives are really great since theirs are huge and have many arms!! but there's one in nearly every electric motor!
- copper shims and spacers present all through motors and stuff
- springs if tightly coiled and flexible make great little cooling type coils when bent into a 'U' shape!
- plastic gears can be painted up and look great cdrom drives have a bunch of these
- steel rails from cd rom drives are great as is but can be heated and bent into nice shapes
- ribbon cable looks great with a black undercoat and copper dry brushing . .some are already coppery!
- hex nuts are awesome when jb welded to other pieces and there's tons of those to be found
- I'm a big fan of the little optical pieces of cd rom drives as is . . .the make great little assemblies but they can be disassembled too and often you'll find things like mini mirrors and prisms!

Quick note on arrangement . . .these items don't have to actually work together but do bear in mind that they should at least appear to serve some specific purpose . . .throwing a bunch of junk together may look ok but it will look infinitely better if it's got some overruling principle or apparent purpose. . .if it looks like it would do something and work then mission accomplished!

Try a few different arrangements and see what you like . . .this is probably the second most artistic part of the whole process (second to the initial overall design) so make it count!

Take pictures of each arrangement so that after you're done you can compare them all and re assemble the best one!

I used the shapes drawn on my gun design to help guide the design of the gizmos . . .it's limiting but it gets the creative juices flowing!

Hoses can be difficult if you don't want to buy anything but coated wires are serviceable you don't strip them and connect them to logical places

this step can be done at any time after the initial design so if you're bored waiting for something to dry or don't want to work on another part this is always a great way to work the both sides of your brain at the same time!

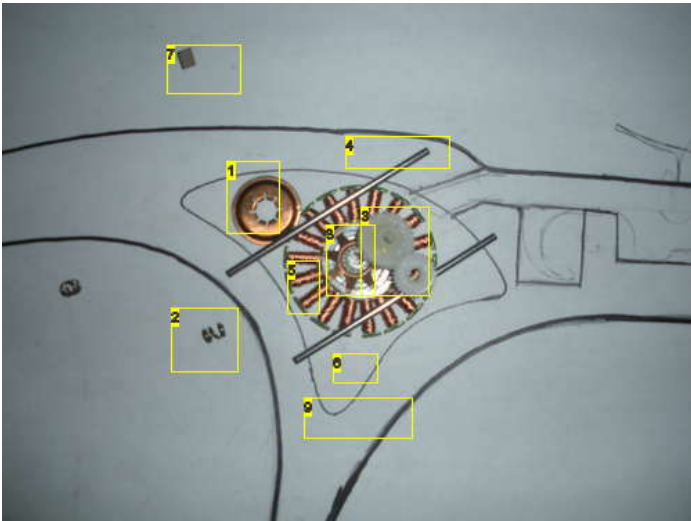


Image Notes

1. yummy copper shims!
2. springs from cd rom drives . . .
3. a little paint an no one will know the difference!
4. also from cd rom drives
5. floppy drive's electromagnetic armature
6. going to put bunches of little wires running amok from piece to piece
7. metallic pads from goodness knows where . . .they look cool though and they're self adhesive
8. another shim
9. using the box to guide my layout

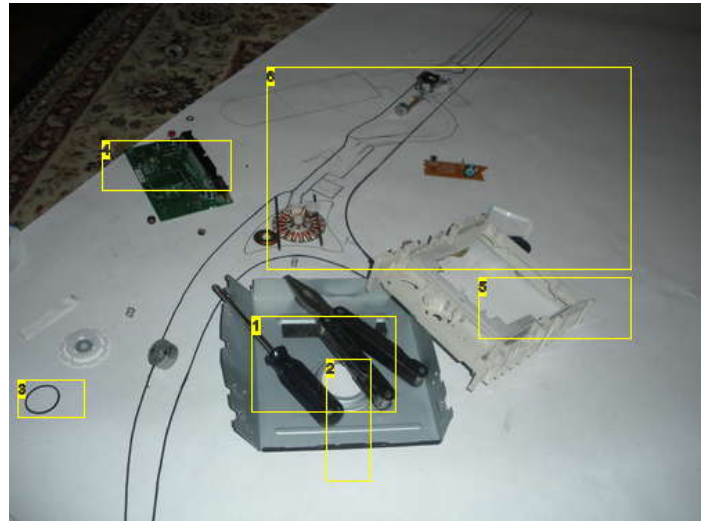


Image Notes

1. tools of the trade
2. perhaps cut this out to make a little porthole type thing . . .a bit of cd case and voila!
3. belt from the guts of the drive
4. not much good for steampunk but maybe useful for cyberpunk?
5. largely junk . . .too obvious where this came from
6. mad scientist at work . . .

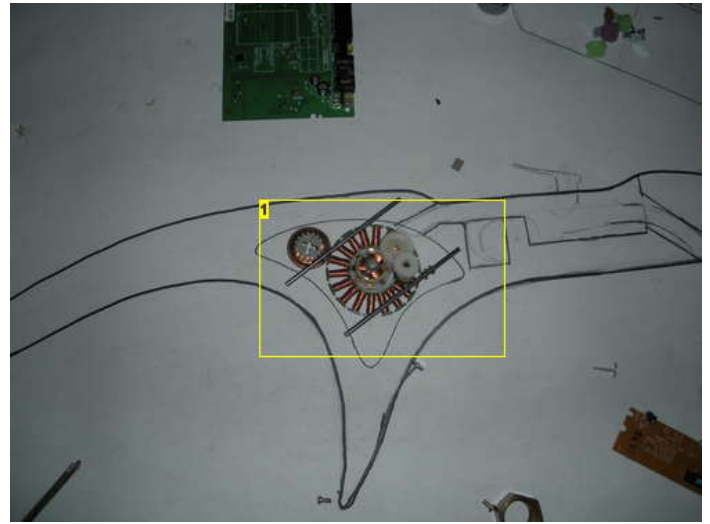
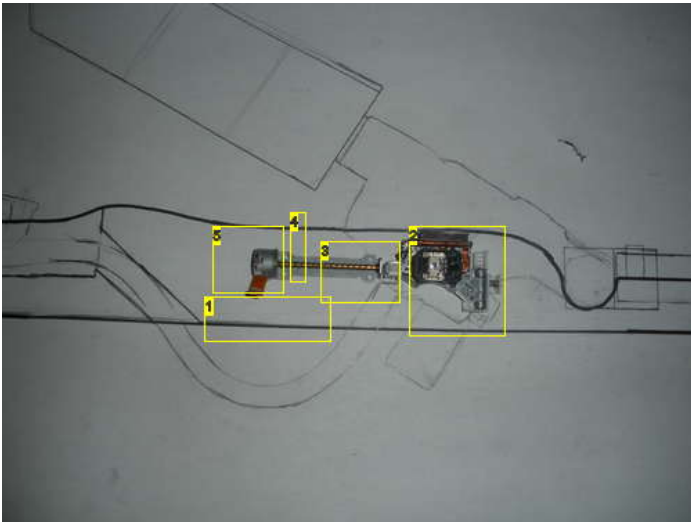


Image Notes

1. this time I am letting the parts guide me to designing a hole
2. untouched optics component of an optical drive . . . will be adding to it and painting it up
3. kind of bare . . . needs some hoses (wires) and stuff
4. cool spiral cut drive shaft!
5. itty bitty motor

Image Notes

1. some more gadgets added

step 11: Installation of the inner "workings"

*the whirring and twirling of motors and gears
like ponderous music which filled the ears
but alas it is music only for the creator
for forever motionless they shall be throughout the years*

Not the true workings just yet but the other stuff.

Tools and Materials:

- all those little found objects from last step (or whenever you did it)
- extra wires and parts just in case
- soldering iron and solder
- JB weld or some other good strong cement (can be used instead of solder since actual connectivity doesn't matter)
- paint for scuffs
- hot glue and gun
- CD cases that aren't being used or any other source of clear plastic
- cardboard for building up ridges around cubbies
- some small screws with interesting heads

Really straightforward step here . . . take all those little gizmos and glue them into the slots and cubbies you made for them . . . use plenty of glue/cement/solder so nothing breaks off. It's not too late to change your design here but make sure any changes still work with your ideas!

Now cut a piece out of the cd case that fits over the hole with a bit of room to spare. It's probably been scratched in this process so break out the polishing compound and give it a good rub down to let you see through it easily. touch up and scuffs in the paint/finish and then glue the plastic down. You've got two options here for the plate around the edge . . . hot glue and cardboard. . . cardboard is easier to make perfect but hot glue can look really nice with a smooth finish. The goal here is to make a retaining plate (or the appearance of one) so do whatever is comfortable to you. Paint this a contrasting color from the screws. Now take those screws and cut the heads off (don't lose them!) and glue them around the retaining plate in a logical fashion (ie evenly) but don't use so many that they overwhelm the project. Give them a paint wash if they're too shiny.



Image Notes

1. don't even bother with this stuff . . .get some real glue . . .like epoxy or something
2. mmmm dinner's served!
3. a graphical playland!
4. waiting to be filled!

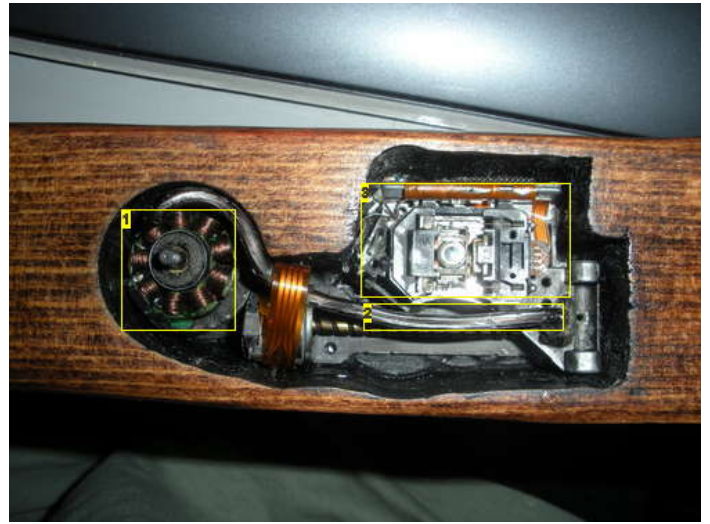


Image Notes

1. heres a tiny armature I found inside a motor from a cdrom drive!
2. bonsai wire . . .super flexible and it has a dark outer anodizing that can be scraped away to leave a great textured appearance!
3. optical goodness!

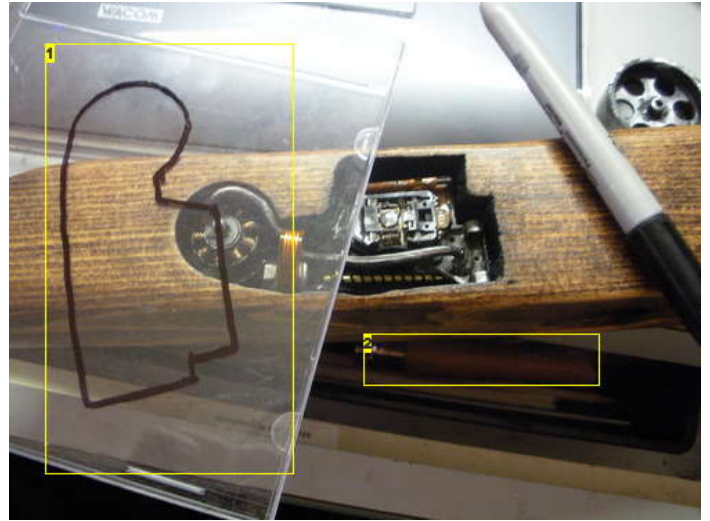
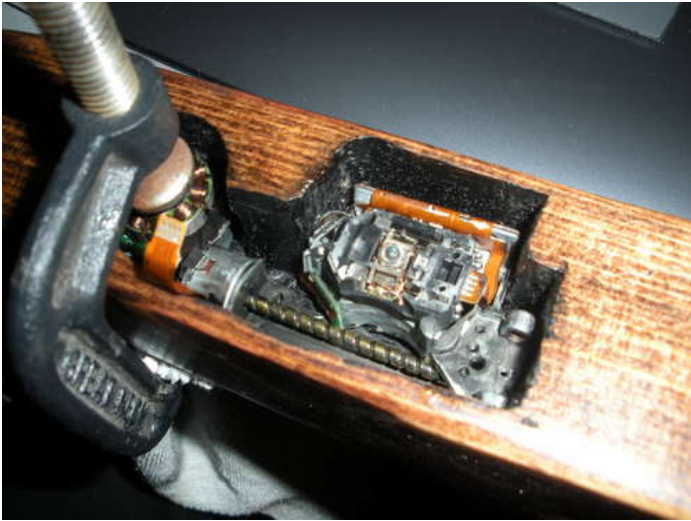


Image Notes

1. mark it out!
2. haha my Opinel! Great inexpensive knives if you want to know! A friend of mine picked this up in France when he was visting his folks!

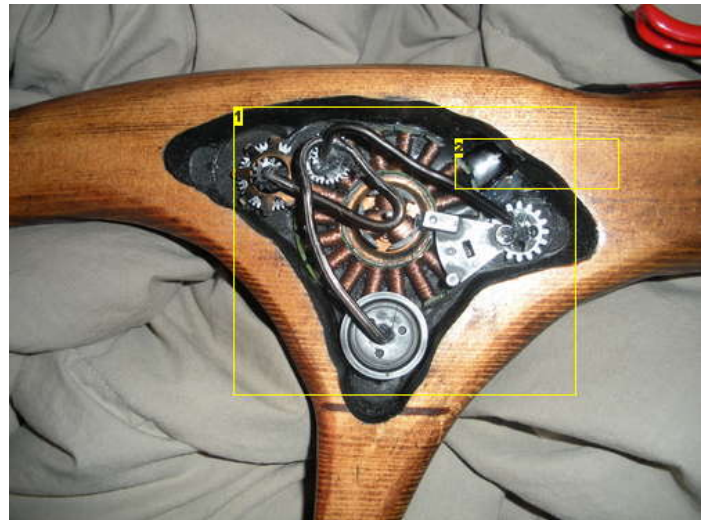
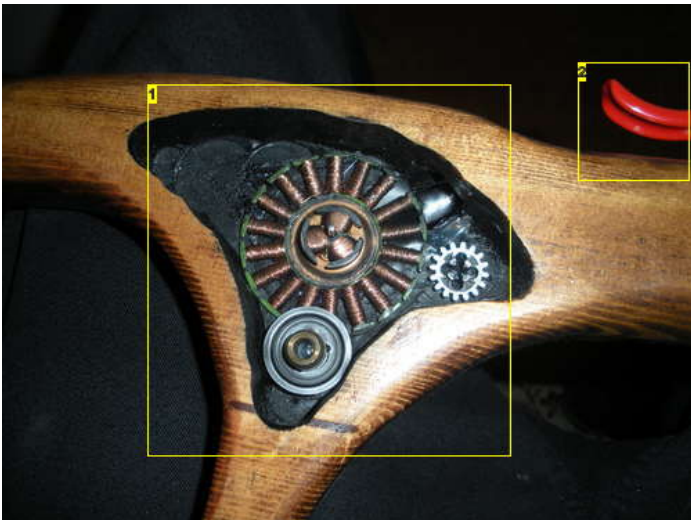


Image Notes

1. playing around with ideas here
2. ugly red trigger . . .must fix this later



Image Notes

1. this hides a slot I cut to let the air escaping the trigger into this cubby out.
2. coils are . . .coily . . .and fun!

Image Notes

1. now we're getting somewhere . . .more bonsai wire here
2. this shiny silver bit is actually the trigger exhaust outlet!



Image Notes

1. desperate need of paint here

step 12: Insertion of the Differential Pressure-Actuated Projectile Expulsion Assembly

Placing the anterior end in first and dropping the posterior end in place the factory workers couldn't help but marvel at the sheer accuracy of the machines . . .little did they know that it was this sense wonder that would ultimately be their undoing

In simpler terms . . .put the barrel in place now. I used some liquid nails but I'm sure other adhesives would do as well. Clamp it in for a good bond! One idea would be to use some ribbon cable for looks. . .cut an appropriate section of that and you've got a tie down! Again with a bit of paint no one will know! What I ended up doing was wrapping electrical tape very tightly and rub n buffing it. Make sure it's in real tight and won't wobble. If it needs any filling around gaps fill those in now with Spackle or epoxy putty and paint.



Image Notes

1. clamped in but protected with the tshirt
2. hose that will be connected later
3. oooooo!!!!lllll dddd bench!

step 13: Finishing Touches

the last hammer blow drove the final nail into the lid. The casket maker stepped back and wiped the sweat from his brow. Looked to the left over the tortured bodies of the slain and saw in his minds eye the long horrible line of morbid boxes yet to be done and sighed . . . business was good . . .too good.

It seems that a project sometimes is never quite complete . . .but if you're this far there isn't much further to go. Look over the whole thing, step back from it, turn it around . . .really attack it visually . . .and fix anything that doesn't look right. I've seen what seems like an infinite amount of projects (largely due to my involvement in the fine arts at school) whose creators got the work "far enough" and then simply quit . . .this is almost more sad than watching all the people who have only heard of the word "art". The finishing touches are the single most important part of almost any undertaking(heh like the word choice? UNDERTAKING!!! get it!?! I know, I know my raw and blinding wit is too much).

Now you're done! post some pictures! show it off! and if you want move onto the next step for a quick discussion on ammunition and the general working of the gun as well as things I've noticed about it's performance.

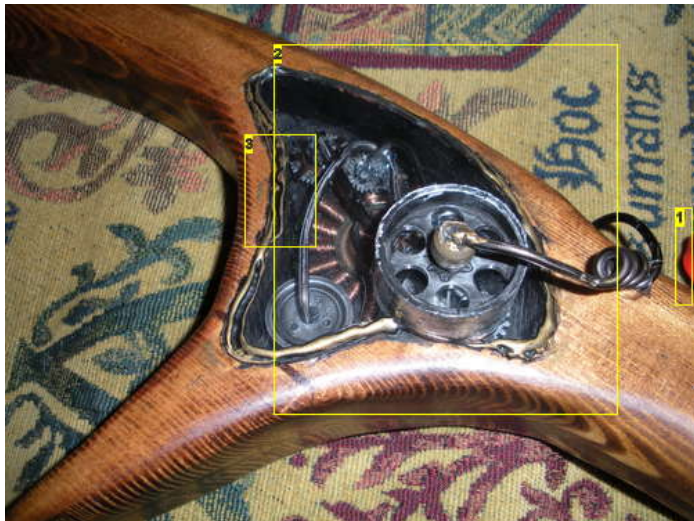


Image Notes

1. this isn't red anymore thank goodness
2. exhaust gas-powered projectile acceleration turbine
3. this is an example of where I need some more work . . .i think a smoother bead would look nicer though I may end up going with a riveted plate look some time

step 14: The Operation And Features of the Hirsch Angocellum Rifle

*page by page she leafed through the dilapidated field manual.
A growing sense of terror grew within her only strengthened
by the information each additional paragraph imparted to her inquisitive mind*

A note on the name . . .Abstraction Abstraction Abstraction! the Hirsch part is an alteration of my own name and the Angocellum is a corrupted combination of Latin words roughly meaning to compress or squeeze together and sky/air. I hope this has a sort of victorian/steampunk sound to it but I'd be more than open to hear what you think of it!

ok to operate this thing you simply place your projectile into the muzzle and ram it down to just before the first elbow (not inside the elbow or you could get it stuck: this can be remedied by driving a thin screw into the barrel just in front of the elbow to stop the loaded item from traveling too far) then hook a bike pump up to it (one with a pressure gauge is convenient but not necessary) and put something in the neighborhood of 70-75 PSI into it (yes you can go higher but this pressure is just fine performance wise and I don't want to go much higher) making sure your valve is closed (if yours has the manual override like mine). Then take aim at something that will not be damaged and pull on the blowgun's lever and hold it down.

Open your valve to release any remaining pressure (sometimes the projectile leaves the gun before all the pressure is released). and retrieve your projectile if it's not biodegradable.

I've used mine to launch the following effectively:

- Paintballs (fit nicely but you have to wad it a little bit with tissue paper)
- pieces of potato (use another piece of pvc as a bullet maker and then load the slugs as any other projectile)
- dirty wadded up tissues and paper towels (great for testing the gun since they aren't hard and won't go too far once they open up)
- the above wrapped in electrical tape to form a ball shape that fits perfectly into the barrel make great reusable ammo
- a sharpened 4inch piece of coat hanger with a cone wrapped tightly around the back (like a blowgun(amazonian this time) dart) works wonders and will bury itself in a tree)
- Confetti makes a great scattershot!

basically anything that will fit in the barrel is fair game!

Slainte!

Kaelessin

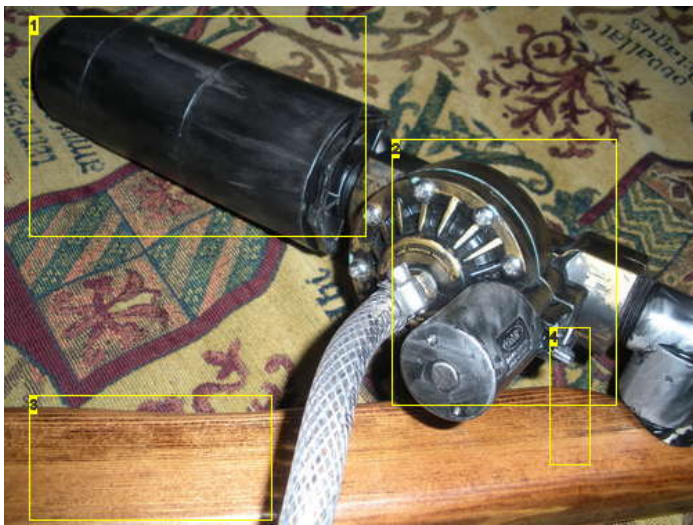


Image Notes

1. compression chamber
2. differential pressure activated triggering system . . . aka a modified sprinkler valve
3. nice to hold in your hand!
4. this knob provides a nice feature: it opens the valve manually and allows any excess gas to escape which makes sure no pressure is in the tank if you don't want any!

Related Instructables



The Bellulus Sniper Rifle: A Steampunk Prop rifle (slideshow) by Kaelessin



Steampunk Pocket Watch (slideshow) by spacepirate04



CyberRifle (slideshow) by drakanfyr



Steampunk Dystopian Sniper Rifle (Mercury Bow) by gmjhowe



Cyberpunk Clock by WallaceTheSane



Cyberpunk Pistol (slideshow) by Doctor Who138



Another Steampunk Pencil (slideshow) by Master Durham




Steampunk Stylus (slideshow) by Master Durham

Comments


[50 comments](#) [Add Comment](#)


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 **sonaps** says: Nov 5, 2009, 6:30 PM [REPLY](#)
 This is truly an impressive build, and the fact that it actually works makes it even moreso. After having played Fallout 3 (more cyberized dystopian type) and having seen some of the ways that weapons reload in it, I've developed an idea for how to make a hand-powered regulator, though the power would diminish with every shot. Still going to give building my idea a shot, might use it if it works.

 **Kaelessin** says: Nov 6, 2009, 10:57 AM [REPLY](#)
 Well I'm intrigued! be sure to document it well i'd love to see it!

 **sonaps** says: Nov 6, 2009, 1:03 PM [REPLY](#)
 I'll be sure to do so, but if I do it and it works, it will be my first published 'ible (I've got about 10 in progress...or halted).

 **Rozarius** says: Aug 17, 2009, 9:16 PM [REPLY](#)
 Wow, this is a great instructab;e. I have been giving some thought to making something alot like this, though with a bit more of a 'real-world' or slightly futuristic look to it. I just wish I had a nice shop setup like you... apartment aren't very well suited to wood working and such. :/

 **Kaelessin** says: Aug 20, 2009, 7:29 AM [REPLY](#)
 awesome! post it if/when you do make it! I would hope that these instructions could be applied to that sort of project too.
 Heh i'm lucky enough to have a dad whose grandpa gave him an incredible shop and has been building on it for 20-30 years. . .
 Agreed on the appartments lol



anslesea says:
how much did it cost to make this?

Aug 15, 2009. 8:27 PM [REPLY](#)



Kaelessin says:
hmmm that's a tough one . . .the wood cost me about 25-30 but could have come from scrap for cheaper . . .
the internals cost me about \$40
the finishing touches etc ran \$12-15
ovberall i would guess in the neighborhood of \$80 but with a bit of searching it could have cost me much less.

Aug 20, 2009. 7:26 AM [REPLY](#)



anslesea says:
its a one shot per pumping deal right?

Jul 30, 2009. 4:57 PM [REPLY](#)



Kaelessin says:
correct . . i wanted to make it feel more old fashioned (like a musket you know?) so didn't bother with a regulator. This is essentially a glorified spud gun.

Jul 31, 2009. 8:24 PM [REPLY](#)



jester_200x says:
do you have to re-pump everytime you take a shot?

Jul 16, 2009. 9:44 AM [REPLY](#)



Kaelessin says:
yep this is entirely a single shot deal. I suppose there'd be a way to attache some kind of regulator but that is a bit beyond my scope right now. perhaps in a future creation

Jul 20, 2009. 1:55 PM [REPLY](#)



jester_200x says:
well ill be damned. aint that a beautiful invention. how accurate is that sunnbitch

Jul 21, 2009. 4:02 PM [REPLY](#)



Kaelessin says:
haha thanks! it's accuracy depends a lot on what I load into it . . . paintballs are great and can hit a foot wide target consistently from more than 100 feet without the aiming system.
With it, the groupings got cut in half (there was a lot of guessing due to a terrible angle difference)

Jul 22, 2009. 11:28 AM [REPLY](#)



jester_200x says:
well i guess your set a post apocalyptic world! i am truly impressed. kudos.

Jul 22, 2009. 5:07 PM [REPLY](#)



jester_200x says:
so its sort of a powderless musket?

Jul 20, 2009. 2:52 PM [REPLY](#)



Kaelessin says:
in a sense yeah!

Jul 21, 2009. 3:00 PM [REPLY](#)



urbanprimate says:
Brilliant! It's nice to see steampunk aesthetics in a functional form! steam-/cyber-punk is about low-cost results..not just making plastic look like wood and brass. The "unfinished" appearance one usually gets stems from function coming before form (that's the "punk" part, which basically means unprofessional), so I have started to get upset at sp "props" that don't actually do anything more than maybe light up. IMHO, bare pvc airguns are more sp than anything nerf, no matter how you paint it!

Jul 21, 2009. 3:14 AM [REPLY](#)

One technical question: Everyone seems to like sprinkler valves for these projects. Wouldn't it be easier to just use the blowgun? In my less cautious days I used to experiment with projectiles that were simply inserted into the end of one. at 100 psi a properly sized nail will penetrate a metal garage/warehouse door at 50+ft and launch a golf tee far enough that you may never find it again..and these are hardly aerodynamic projectiles, as the only way to make it work without any mods was to load them backwards. It just seems like it would be more efficient than just using it to change air pressure and trigger another valve. I know it wouldn't be so popular without reason..maybe part of the pressure vs. volume arguement?



Kaelessin says:

wow thanks for the detailed comment! I enjoy reading lengthy ones!

Jul 21, 2009. 3:12 PM [REPLY](#)

It's my belief that form and function must come together to produce something greater than either . . .that's what I attempted to do with this piece.

the reason behind the sprinkler valve is mainly because it's a much shorter time from being fully closed to fully open than a ball valve. Granted a blowgun is just as fast to open but it has a very small aperture. (less than 1/8 inch if i remember correctly if you don't mod it.) whereas the sprinkler valve has as large an opening as you like (for mine it was 3/4) this difference in size allows the air to escape (35 times for mine assuming my 1/8 inch guess is correct) faster which of course results in less wasted energy. This begs the question though: why is it ok to have the small blowgun to initiate everything? The answer: the blowgun only has to let out a TINY amount of air from the top of the diaphragm and so it doesn't matter that it's so narrow.



wscottc60 says:

WOW! This is AMAZING! The details are stunning and function is GREAT!

Jul 12, 2009. 12:02 PM [REPLY](#)



Kaelessin says:

thanks! heh crazy fun to shoot too!

Jul 21, 2009. 3:00 PM [REPLY](#)



whocares88 says:

cool i made a ray gun

Jun 30, 2009. 5:16 PM [REPLY](#)



ten77 says:

n00b question time!! can i fit this to work with a co2 canister like a paintball gun?

Jun 24, 2009. 8:38 PM [REPLY](#)



Kaelessin says:

yeah definitely . . .you'll need to look into things like a regulator and all that though which may add up to a lot of money in the end . .

Jun 25, 2009. 11:30 AM [REPLY](#)



zuneman says:

I think this is the best steampunk instructable i have seen i like the idea and i might try to make one similar but that works.. oo ya Great Job yous realy nice

Jun 17, 2009. 1:30 AM [REPLY](#)



Kaelessin says:

:D! I'm glad you think so!

Jun 24, 2009. 5:05 AM [REPLY](#)



P4nz3r says:

This is some great work! I have also been looking around Instructables for a working Steampunk gun, and was really disappointed to find that none existed. The finished product looks awesome, and this is one of the best 'lbles I've seen in a long time! If you ever end up making something similar again, maybe try incorporating some way to breach load it?

Apr 30, 2009. 3:13 PM [REPLY](#)



Kaelessin says:

definitely! thanks for looking

Jun 24, 2009. 5:04 AM [REPLY](#)



toaignika says:

found a really good breach design at this http://nerfhaven.com/homemade/zero_breech/
it's made for a nerf gun but I think it could be modified to fit nicely

May 26, 2009. 5:27 PM [REPLY](#)



P4nz3r says:

That's a pretty good design!
If you're going to make something like that, why not just rotate the barrel instead of removing it?

May 26, 2009. 6:45 PM [REPLY](#)



AlternateLives says:

Great vid. Music was perfectly appropriate. gun looked great. gun *shot* great. and finally! **a working steampunk gun!**

Jun 23, 2009. 10:50 AM [REPLY](#)

Oh, by the way...

Ever thought about pumping it up with an air compressor? that pump has got to be incredibly hard to get up to 70 psi.



Kaelessin says:
thanks! Ez3kiel is great aren't they?!

Jun 24, 2009. 5:04 AM [REPLY](#)

lol yeah i did it with the compressor a couple of times but like the hand op pump better . . . it's not too hard thankfully



theophilus says:
slaine mor!?

May 15, 2009. 7:52 PM [REPLY](#)



Thundertydus says:
Flgah Gurnn!

May 18, 2009. 8:57 PM [REPLY](#)



vIDo says:

Jan 30, 2009. 4:24 PM [REPLY](#)

this is awesome... I'm just starting doing steam punk stuff myself.. made one (small) functional hand gun.. (sadly forgot to make pictures of the building process. :() it works using flash cotton (got the idea here: <http://www.instructables.com/id/S6AD83KFE379E1E/>) the inner size of the barrel is 6mm ("BB-gun" bullet) and after some testing we found that we can shoot clean through cola cans.. (if loaded right!.. that is 5 balls at once)

(still have to find a good way to make those battery's more steam punk.. >.<')



bowmaster says:
Just put them in big copper pipes.

Apr 26, 2009. 1:08 PM [REPLY](#)



Kaelessin says:
heh fiiiiirrrreeeee :D

Jan 30, 2009. 6:12 PM [REPLY](#)

sweet pistol though! you could bury the batteries in the wood and cover it with some kind of removable plate
if you ever make a vid I'd love to see it!



vIDo says:

Jan 31, 2009. 4:13 AM [REPLY](#)

theres not enough place in the wood for the two AA batteries :(it's just too small.. planing on making a new/ bigger one.. but I don't have that much time (and I'm broke :() so it's gonna take some time

I am planing on making a vid.. but a few days ago it malfunctioned and I still need find out what made it malfunction and to repair it.. >.<' (i think my glowplug is broken..) but if I do make a vid I'll send you a note..



Wolframite says:

Apr 9, 2009. 8:04 PM [REPLY](#)

Try (spray?) painting them bronze. You could add some sort of texture before you do, or leave them smooth. They also make a sort of goop that textures when dry in a sort of crystalline fashion, which, if you painted your batteries white or silver beforehand would give them the look of an actual crystal, perhaps. A crystal-powered pistol could be pretty steampunk, in my humble opinion.



vIDo says:

Apr 13, 2009. 1:18 AM [REPLY](#)

I already did some modifications: I re did the wiring, new glowplug, changed the way the barrel is secured to the handle and peeled the plastic cover of the batteries these changes made the look a lot better and upgraded the safety by 300% (no more malfunctions, spontaneous gunfire and loose barrels)



Kaelessin says:
ah . . .murphy strikes again eh?

Jan 31, 2009. 7:42 AM [REPLY](#)

good luck troubleshooting (heh the puns just keep getting worse!)



bowmaster says:
Needs more copper tubing.

Apr 26, 2009. 1:08 PM [REPLY](#)



Madrias357 says:
Okay, Kaelessin. You asked to be able to see this project when it's done. I'm never gonna be 'done' with it, but I have the basics for how to make mine. Does show some of the project.

Apr 23, 2009. 5:47 PM [REPLY](#)

<http://www.instructables.com/id/Handmade-Airsoft-Rifle/>



Kazeem says:
If you ever thought of modding it for more air capacity, you could use a large metal tank, like those used for flame throwers :P
Have a few dials sticking out of it for the sake of it aswell...

Apr 19, 2009. 12:46 PM [REPLY](#)



moonball33 says:
great work , but what are you doing preparing a steampunk rebellion? :-)
{by the way if you are i think you should see if you can get gmjhowe's "http://www.instructables.com/id/Steampunk_Dystopian_Sniper_Rifle_Mercury_Bow/" to work then we can really get people to turn to steampunk culture.} lol

Apr 2, 2009. 1:43 PM [REPLY](#)



Madrias357 says:
Probably wouldn't be too hard. I'm almost done with my Airsoft Air Rifle, which if you put the parts into any steampunk/cyberpunk gun, you can make it actually shoot.

Apr 3, 2009. 5:07 PM [REPLY](#)

Estimated time until instructable is complete: 4 days, 2 hours, and 45 minutes.



Kaelessin says:
lol that's specific!

Apr 6, 2009. 3:46 AM [REPLY](#)



Madrias357 says:
That's the time I'm giving myself to complete the project. I want to get it done (done being functional, not exactly looking shiny and new/ used) before my friends and I get into the big battle**

Apr 6, 2009. 12:55 PM [REPLY](#)

*for those who aren't exactly in my group of friends, the Big Battle is a huge airgun war. We strap our 7 gallon tanks on, run our airlines, and shoot at one another with handmade airguns. Usually we keep our Air pressure low enough to not hurt someone more than a really nasty welt. Usually done outside, though this time, one of my friend's parents found an old warehouse owned by one of their friends and got permission to use it. Much nicer cause it has heat!



tacamaral says:
Cool! Awesome job, man. :)

Feb 22, 2009. 10:43 PM [REPLY](#)

Does anybody else remember a Sherlock Holmes's story in which the bad guy uses a similar gun to try and murder Mr. Holmes?



Madrias357 says:
If you can remember the name, I'd give it a read.

Mar 23, 2009. 2:44 PM [REPLY](#)



joiless says:
Captain Morgan had a pneumatic gun in "The Adventure of the Empty House."

Mar 24, 2009. 12:00 AM [REPLY](#)

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