

MAKERS MANUAL #3

Theo Tan



INTRODUCTION

This manual is an introduction to using the lathe – a machine that spins a piece of wood around an axis at high speed. The user can then make cuts and incisions to create cylindrical, spherical and ellipsoid forms. The design of this machine is a reimagining of a medieval piece of technology - the pole lathe. In this manual the lathe will be constructed from items you can find around your kitchen and tools found in the cutlery draw. Rather than turning a piece of pine, oak or mahogany – we can turn carrots, parsnips and beetroots and the objects created could form part of a miniature table, a piece of a chess set or a beautiful baton to throw in a casserole.



LIST OF THINGS

MATERIAL

- Carrot
- Parsnips
- Potatoes
- Beetroot

TOOLS

- Large Chopping Board
- 2 Tins of Food (preferably without pull tabs and preferably beans)
- 2 Belts
- 2 Chopsticks
- String
- A Few Rubber Bands
- Clingfilm/Greaseproof/Tin Foil Box
- Bread Knife
- Hammer
- Large Nail/Screwdriver

SAFETY

Tie hair back and remove necklaces, wear safety spectacles where appropriate. Do not use overly sharp tools. Handle all sharp tools with care.

BIO OF THE DESIGNER

Theo Tan is a London-based designer working in a range of materials from calico, leatherwork, precious metals and more. Much of his working process involves a deep understanding of existing craft skills to the point that he is able to misuse and re-appropriate old techniques.

FURTHER READING

→ Woodturning: A Foundation Course (New Edition)
By Keith Riley

→ Woodturning Instructions:
www.youtube.com/watch?v=JaXPIKBwzM-w&t=162s

→ Instructions for Making PSI's Chessmen Chess Piece Set https://www.pennstateind.com/library/CHESSTMP_ins.pdf

→ The Development of the Lathe 200 - 1850
Copyright Peter H. Kunz. CH-8200 Schaffhausen
http://www.feuerwaffen.ch/index_htm_files/Craft_08_Lathe.pdf

Makers Manual is a collaborative project between exciting makers and STORE STORE. Participation is free and no design background is necessary. You can share your creations using #makersmanual. We will pick our favourite submissions and publish the results in a limited printed edition of all of the manuals. Everyone who makes it into the book will receive a free copy.

This project is supported by Coal Drops Yard.

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STRING BRUSH

STEP 1

The first task is to make the spindle for which we will be able to spin the carrot. To do this, take 2 tins, do not open them, and puncture a hole in the centre of each round face. You should end up with 4 holes. The best way to do this is to take a large nail with the point at the centre and firmly hit it with a hammer. If you don't have a hammer or nail, you might be able to puncture the tin with something else.



1

STEP 2

Let the liquid drain from the tin.



2

STEP 3

We now need to strap the tins to the chopping board, this will provide a rigid structure for the lathe. The most straightforward way to do this is to take two belts and secure it around the chopping board and tins. However this is very dependent on length of belt and size of chopping board. Some ways around this would be to punch new holes in the belt, beef up the size of the chopping board with books on the back side, use a

truck ratchet strap or failing all else use tape or string.



3

STEP 4

Insert chopsticks, thin end first, from the outside holes to the inside. This may require increasing the size of the holes on the outside, where the chopstick is thicker. To do this take a pair of scissors and twist it into the hole - do this as little as possible as we want a tight fit. You want the chopstick passing through both holes and the thin end protruding a centimetre on the inside.



4

STEP 5

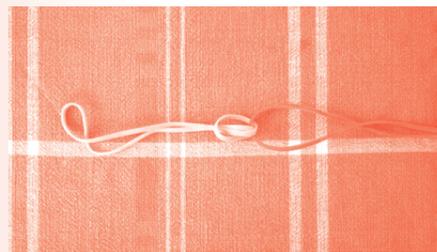
Cut the top and bottom off of the carrot and make a dimple in the centre of where you have cut with a chopstick/screwdriver/knife.

STEP 6

Align these holes with the two chopsticks protruding from the tin and press the chopstick firmly in to grip the carrot. Now wiggle everything together so that the carrot touches both tins. You should be able to spin the carrot now.

STEP 7

Take a number of rubber bands and chain them together by feeding one into the other until you have a length of about half a metre. Tie a 2 metre length of string to either end of these rubber bands.



7

STEP 8

Take the end of the string and tie it to a place 2 metres away from and directly in front of the lathe. This could be tied to the underside of the table, to a door handle or a weighted down chair.

STEP 9

Take the other end of the string and make 1 loop around the carrot and continue on. You should now be able to pull this string and rotate the carrot one way and the rubber bands will rotate it back the other way.



9

STEP 10

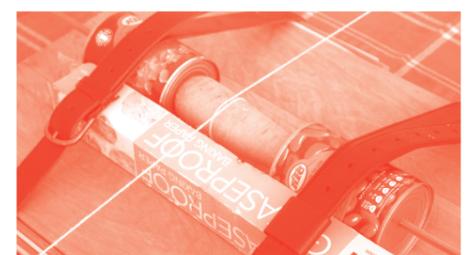
Sit down in front of the lathe and tie a loop in the string, and place that loop around your foot. Try to find the right place at which you can move your foot up and down to rotate the carrot. This is very difficult on your legs so you can also have a partner simply pull this back and forward for you.



10

STEP 11

Place the cling film, greaseproof, tin foil box under the belts and against the tins. This is the lathes tool rest and prevents the carving tool from jumping around as you spin.



11

STEP 12

Begin to turn the carrot! The first cuts that you make should be done to make the carrot as cylindrical as you can. You can then start carving grooves and bulbs as you like.



12

STEP 13

Experiment with different tools in your kitchen. If you intend to eat your creations please make sure that all of the tools you use are clean.

