

Carting around

Michael Engels shows you how to build a wooden box-cart.

Plummeting down the street on a rickety box-cart seems to be a joy of yesteryear. But don't despair, because with this project, you can reintroduce your children or grandchildren to this exhilarating affair, one which was very common in the days before computers and satellite television. The box-cart can be made as extravagantly as you want, but always take into consideration the safety aspects of the vehicle. Also consider the weight and size of the child for whom the box-cart is intended.

Assembly of the front axle

Find the centre of the 370mm x 70mm x 19mm (top) piece of wood and drill an 8mm hole through it. On one side of the top piece and on either end, glue the two pieces of 120mm x 70mm x 19mm timber. This is going to act as a spacer to allow the

axle to pass through the centre without being restricted by the centre bolt, which will be used during final assembly.

Approximately 30-40mm on each end, mark where you will drill the holes for the U-bolts to go through. Once this is done, drill the four holes and put the U-bolts through. The first galvanized pipe can then be put through and secured on the top with nuts.

Seat assembly

The 370mm x 370mm x 19mm piece that is to be used as the base of the seat can be rounded off in the front where the legs go through. The sides, two 220mm x 120mm x 19mm can be shaped prior to assembly. I left my pieces rectangular, but cutting away an angled piece or rounding the front part would make it look more complete.

I chose to use the dowels for my assembly, but screws would work just as well. My reason for this was if the child had a mishap where the pieces of work came apart, there would be no sharp screws sticking out. Once again this is down to personal choice. The sides and backrest must be assembled into a U-shape first and to the inside of the backrest, as the base of the seat restricts the size to 370mm long. Drill the holes for the dowels

into the end grain of the sides and, using the brass dowel locating pins, transfer the centre point onto the backrest and then drill these holes.

Insert glue into the holes and then insert the dowels. Once this is done, the sides and backrest can be glued, assembled and clamped to dry. Once dry, the holes must be drilled into the bottom of the sides and backrest, and the dowel locating pins again inserted to find the exact position on the base of the seat, in order to drill these holes.

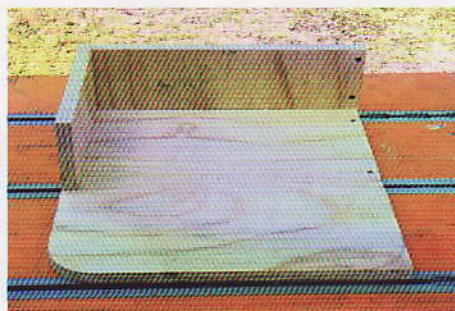
Once this is done, glue needs to be put into the holes, dowels inserted, base attached and clamped until dry. Turn the seat over and secure the last piece to the back part of the base where the rear axle is going to be secured to. Mark to the inside, but as close as possible to the side of the seat and the position where the U-bolts will need to come through, allowing enough space for the nuts to be tightened.

Top tip

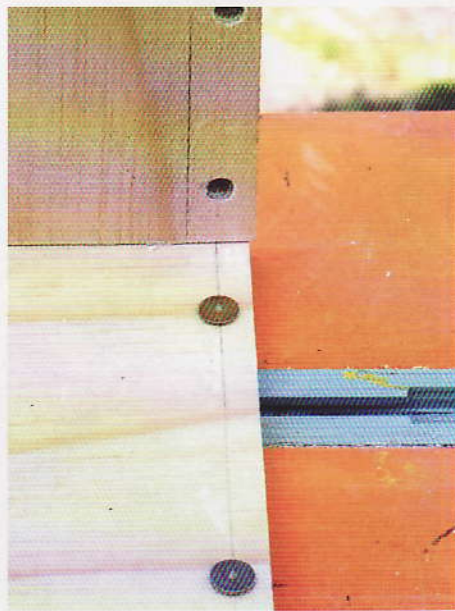
When purchasing the U-bolts, make sure there is sufficient thread on the top to allow a nut to be tightened onto the bolt. The U-bolts are not all the same length and you could find yourself going out to buy more.



First assemble the sides to the backrest before attaching to the seat base.



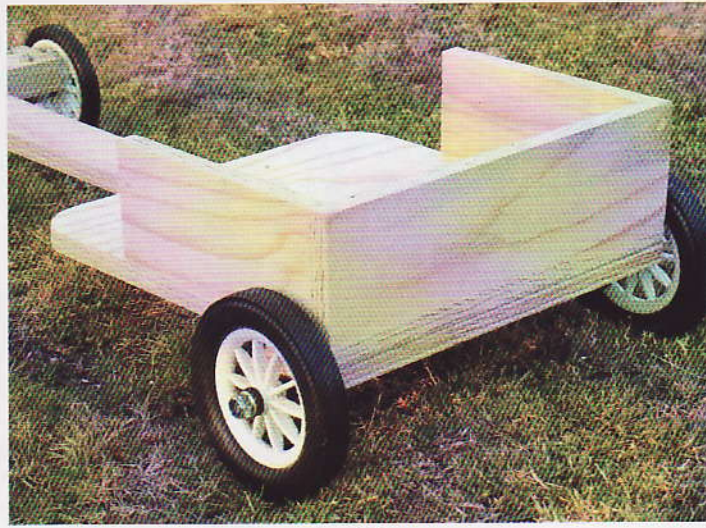
Holes have already been drilled for the dowel joint.



Dowel locating pins to mark the position on the adjoining pieces of wood.



❶ The seat was assembled with dowels, that in the event of an accident, would be safer than exposed screws.



❶ A rear view of the completed box-cart.

Assembly from here is the same as the front axle.

Attaching the drawbar

The dimensions given are 900mm, however, you will have to change this length to suit that of the child. Find the centre of this piece at both ends as you are going to be drilling through it shortly. The side that is going to be used in the front of

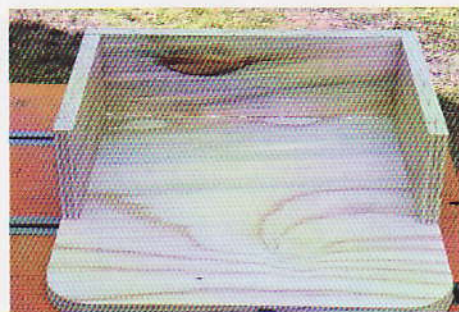
the box-cart can then be rounded off, and about 40-50mm from the front, drill an 8mm hole into which you then insert the cup square bolt through.

On the other side, between the axle and the drawbar, insert a large flat washer and on the bottom of the axle, secure the assembly with another washer and the locknut. On the seat side of the drawbar drill two holes. Find the centreline on the

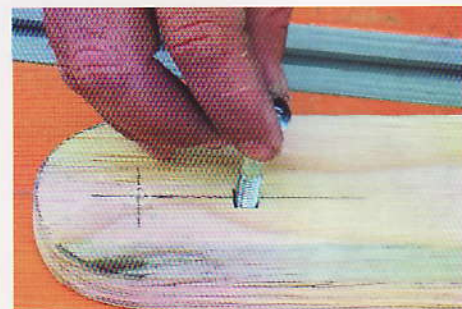
seat and transfer the two holes of the drawbar onto the seat and then drill through the seat. On the top side of the seat, countersink the holes and insert the countersunk screws through both pieces of



Round off the corners on the front side of the seat.



Completed seat. Remember to wipe away glue before it dries.



Positioning of the square cap bolt.



Mark out the thickness on the back and side pieces on the spacer to enable you to drill the holes as close as possible to the sides of the seat.

Materials

- Seat:
 - 1 x 370mm x 370mm x 19mm (base)
 - 2 x 220mm x 120mm x 19mm (sides)
 - 1 x 380mm x 120mm x 19mm (back)
 - 1 x 370mm x 70mm x 19mm (rear axle spacer)
- Front axle:
 - 1 x 370mm x 70mm x 19mm (top)
 - 2 x 120mm x 70mm x 19mm (front axle spacer)
- Drawbar:
 - 1 x 900mm x 70mm x 19mm
- 4 x Ellis U-Bolts (25mm)
- Rope - 1,5m
- 4 x wheels (150mm diameter)
- 8 x spacers
- 15mm galvanized water pipe - 370mm x 2
- Eight 10mm washers
- Threaded rod x 2 470mm x 10mm
- Flat washer 48mm x 1,5mm
- 4 x 10mm lock nuts
- 1 x 8mm lock nuts
- 8mm dowels
- 8mm x 50mm cup square bolt
- 2 x eye hooks
- 2 x counter sunk screws + nuts 45mm x 6mm

wood and secure with a washer and nut. On the top side of the front axle, insert the round hooks and secure the rope that will be used for steering the box-cart.


Assembly of the wheels

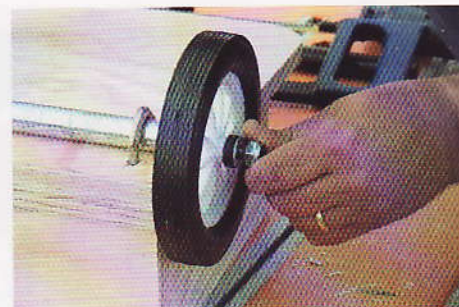
Insert the threaded rod through the galvanized pipe and then on either side insert a washer. The spacer is then added, followed by the wheel and another spacer. A washer and a locknut are used to finish off the assembly.

All sanding is to be done prior to assembly. If the box-cart is going to be painted, it would be advisable to do this



This is the desired position for the U-bolts.

prior to inserting the galvanized pipe, as you will need to get under it to prime and paint it properly. By shopping around, the box-cart should cost less than R200 to make and can be done in a morning. 



The wheel with the spacer and washers. Ensure the spacer is on the other side of the wheel as well.



Ellis U-bolts holding the galvanized pipe in position.



Eye ring shown in position.



Ropes tied through the eye rings.



The completed steering mechanism.



The underside of the box-cart.