Introduction

Caterpillar tracks are used by construction vehicles to gain traction in muddy ground, and by military vehicles to travel across rough ground. Note the more delicate soft earth blade on the earthmover treads left compared to the hard surface climbing treads above. In addition the drive wheel in the tank tread is placed above the road wheels to create a ramped front surface; the tractor on the left has the drive wheel tangent to the line of the small road wheels.

The techniques used to create working treads in Blender can also be used to animate drive belts or chains for machinery.

Principle

We’re going to make a Bezier path and create a long subdivided plane that will follow that path using the Curve modifier, then replace the faces of that rectangle with suitably shaped treads.

Practice

Create a Nurbs circle and change it to the shape of a track path in Edit mode. You can always change it later if the shape is not yet decided. Rotate it around the Y axis so that it is in the correct location.
Now make a tread from a cube and, still in Edit mode, move the geometry so that the tread's pivot point is in the center of its base. Add an Array modifier along the Y axis and add a dozen or so copies.

Next, add a Curve modifier and choose the BezierCircle as the object. It may appear very distorted at first: click through the Deformation Axis options until the treads follow the curve.

Now increase the number of copies in the Array modifier until the treads almost fill the curve. You may then need to slightly increase the treads local Y scale to fill the remaining gap (alternatively you can adjust the curve).
Now move the treads along the Y axis and they will roll around the curve. This is the action of a drive belt (though you’d have to reverse the tread object for it to look realistic).

Then select the curve and move it along the Y axis - the treads roll along with it. This action can easily be animated to create a tracked vehicle.