

The Chestnut Planter ensures the successful plantation of forestry as it ensures that the tree saplings are planted at the correct depth every time that that you dig your hole. It ensures that every hole that you dig will be the same for each of the sapling roots to ensure that the sapling has the best possible survival rate once it is planted in to the soil. It also eliminates the need to bend down and place the sapling into the soil as the catching mechanism moves the sapling down in to the soil. It will reduce the stress on both the planter and the Planted Sapling.

Irish Forestry Facts


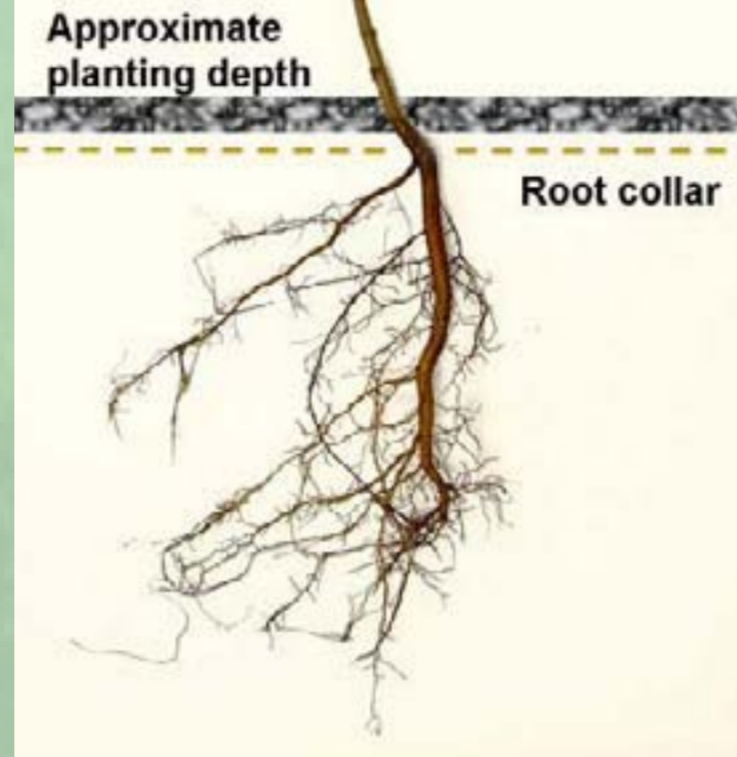
- There has been a rapid increase in the area of investing in farming, with a return of between 15% and 30% from the investment.
- In Ireland there is currently over 16,000 landowners who have a plantation of forestry. This plantation includes large and small scale plantation of forestry.
- The farmer receives a forest premium payment of up to €427 per hectare of planted forestry for the first 20 years.
- The value of timber is currently valued at €15,000 a hectare net of costs, with 70% of trees planted being conifer, and the other 30% being broadleaf.
- On average 10.7% of the Republic of Ireland is covered in Forestry with the largest % in Wicklow (land cover 202,483 ha) at 21.53% and the lowest at 3.96% in Dublin (92,156ha).
- Currently 9% of Irish land is forested, however the plan is to increase this figure to 17% of land by 2030.
- The average price to stand a timber in 2002 was €27.28, while this rose to €60.98 in 2010.

GRANT/PREMIUM CATEGORY (GPC)	FARMER PER HA/PER ACRE	NON-FARMER PER HA/PER ACRE
GPC1 Unenclosed	€155/ €63	€126/ €51
GPC3 10% Diverse	€427/ €173	€181/ €73
GPC4 Diverse Conifer	€454/ €184	€181/ €73
GPC5 Broadleaf	€481/ €195	€195/ €79
GPC6 Oak/Beech	€515/ €208	€195/ €79
GPC8 Alder	€481/ €195	€195/ €79

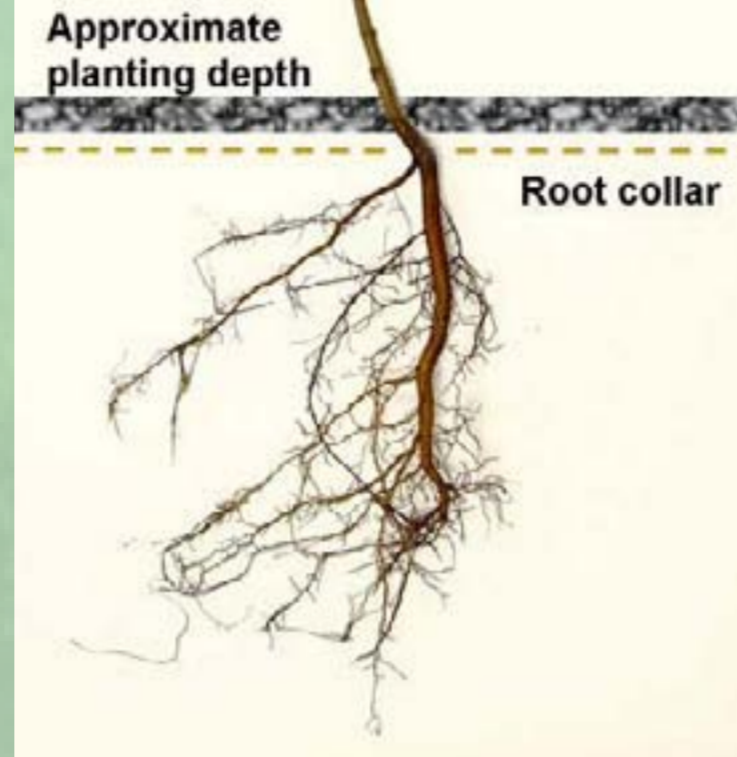
Issues around Planting Forestry

Dig, Drop and Pack

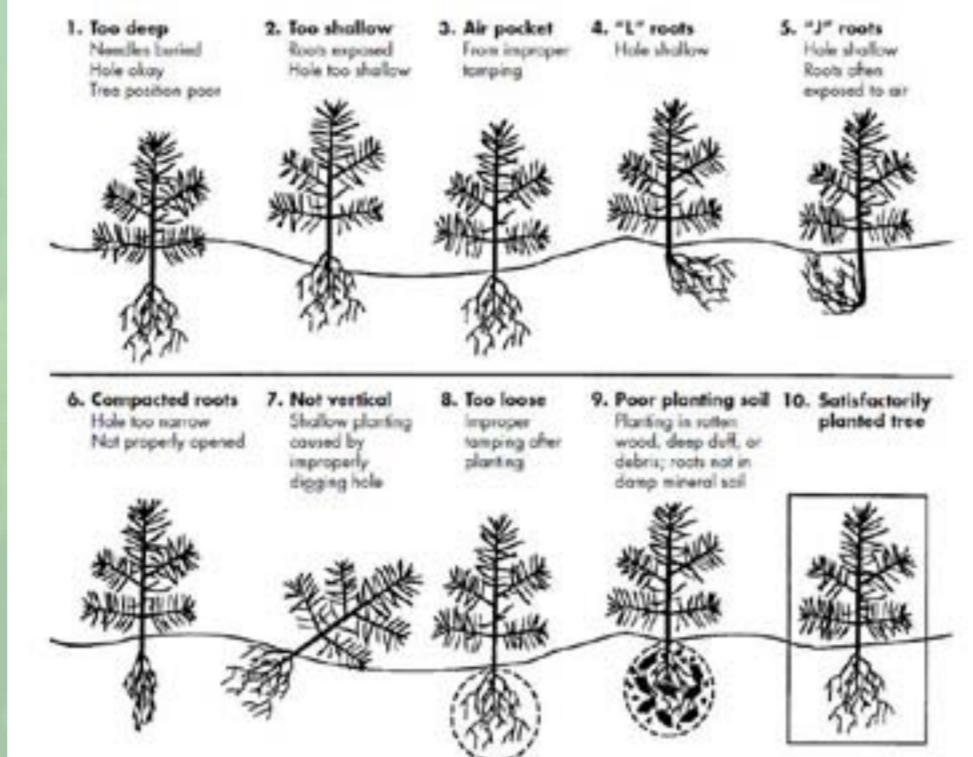
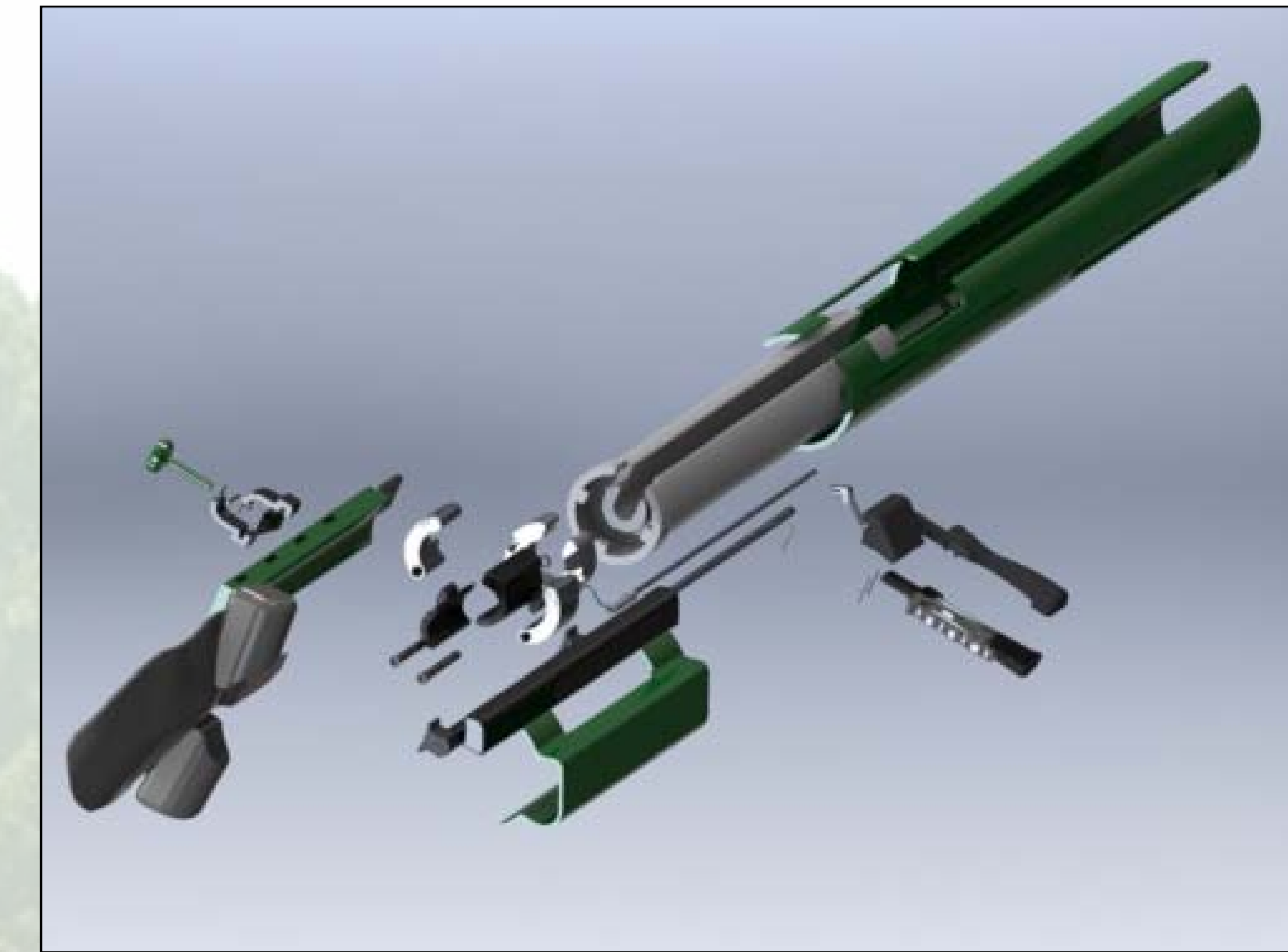
- The main issue with planting saplings is that every 3 out of 10 saplings die when they are planted in the soil.
- The main reason that the saplings die is that they are not planted correctly, with saplings being planted too deep, too shallow or that the roots are being pressed down too deep into the soil which results in damaged roots, or bent roots.
- Another issue is with the person who is planting the sapling and the strain on their back when having to plant so many saplings during the day and the damage that planting the saplings can do to a persons back over years of planting forestry.

Approximate planting depth

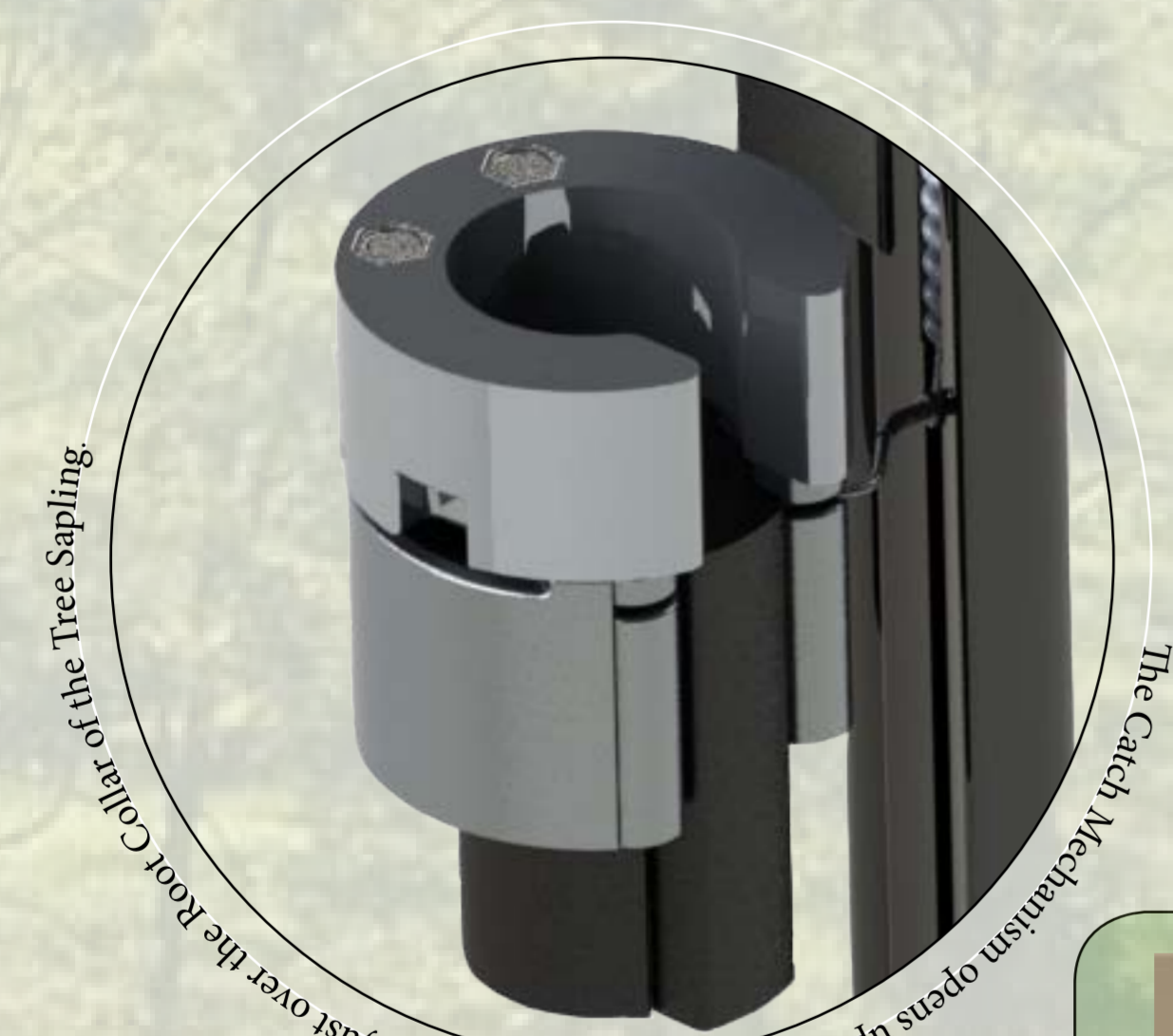


Root collar

Exploded View

Features of the Chestnut Planter.



How it Works

1. Setting Depth Control of Shovel

In order to set depth control of the shovel loosen the lock shovel mechanism that is bolted through the shovel. Once loose you can open out the two brackets and move the shovel up the shovel moving mechanism on the frame of the main core. Once you have your desired length from base of core to end tip of shovel tighten up the lock shovel mechanism.

2. Movement of Inside Core Sapling Planter

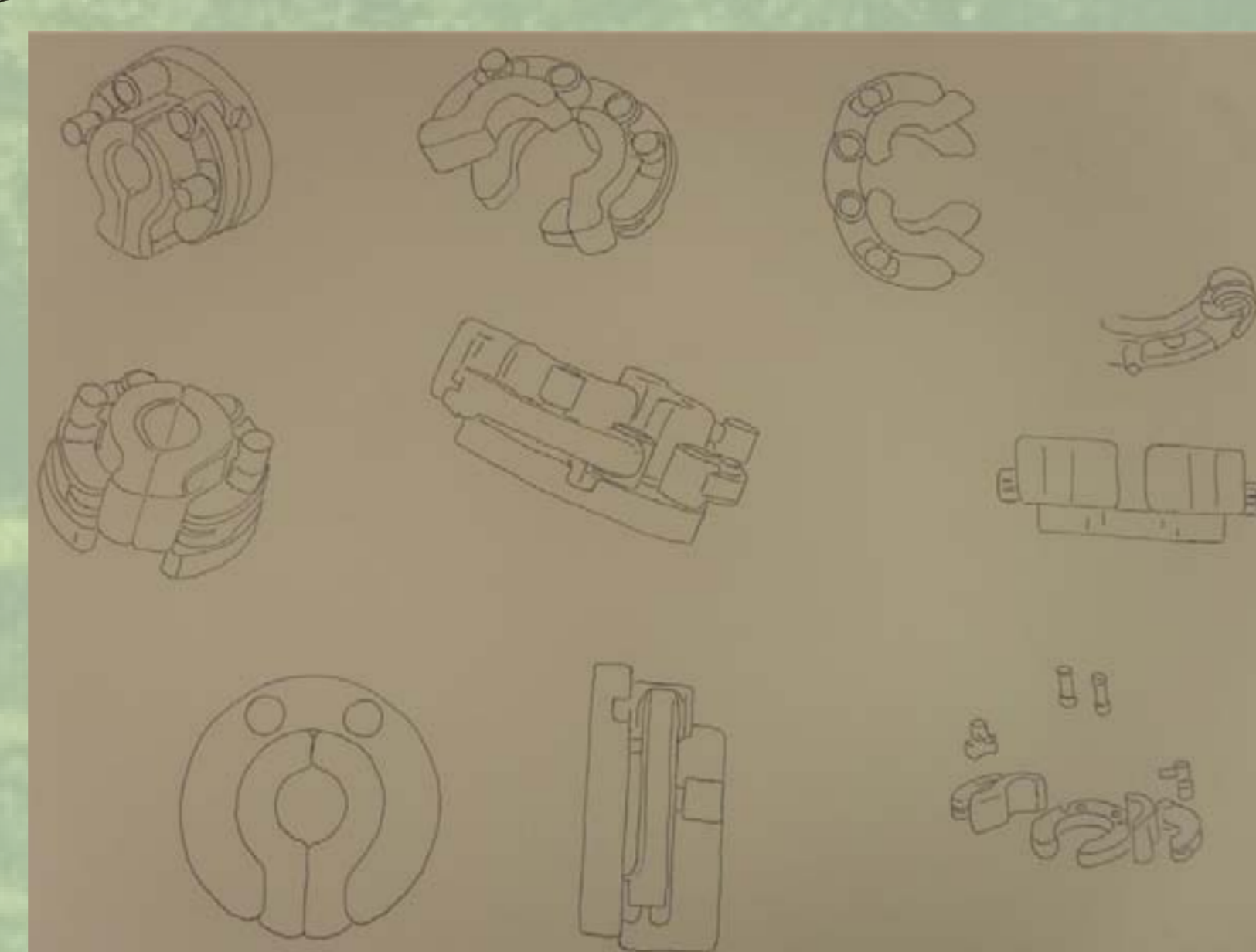
The movement of the inside core sapling planter is controlled by the handle of the chestnut planter, which is linked to a gas spring and once you push the handle down that the gas spring will release and push the handle and inside core back up. The main core is double plated on the inside for a distance so when the inside core sapling planter moves back up that this part will take the pressure off the handle when the gas spring is fully extended.

3. Opening and Closing the Catch mechanism to place in Tree Sapling.

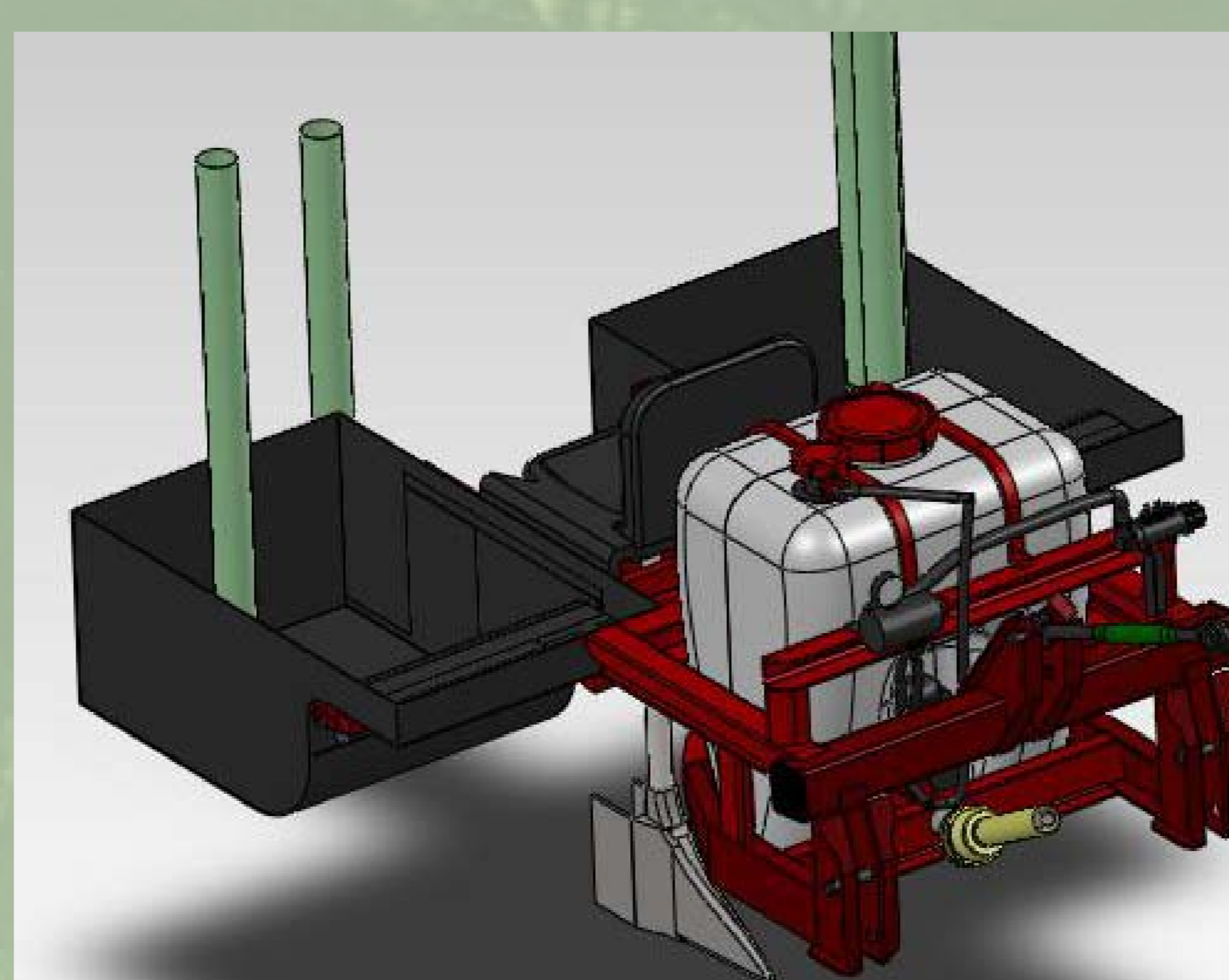
There is a connector cable running through a connector frame, which is inside the solid shaft. The connector cable catches the catch mechanism and it is the connector cable that opens up the catch mechanism so that the sapling can be placed in the planter. The catch cable wire catches in under the connector which attaches on to the handle press. Once the press open handle is pressed it strains the connector cable and opens up the catch mechanism. Once the press open handle is released a spring presses against the catch cable wire and closes the catch mechanism. Once the handle is pressed down to plant the sapling the cable wire stays under tension because there is another spring in the solid shaft to ensure the wire stays under tension. Once the handle is dropped press open the handle to open the catch mechanism and plant the Sapling

4. Placing in and removing Tree Sapling from Chestnut Planter.

Place the sapling in to the chestnut planter by placing it under the catch mechanism of the chestnut planter. It is important to ensure that the saplings roots are placed on the underneath of the planter to ensure the successful plantation of the sapling. Once planted open up the catch mechanism and lift the chestnut planter up and away from the planted sapling. Pack around the soil with your foot when finished.



Drawings



Development Drawings



Test Models



Final Model