

Title: A Kiwi Vine Pruning Device

Application No. : 202331018933

Patent No. : 529277

Date: 20-03-2024

Kiwi vine normally grows 2-4 m every year and becomes overcrowded and unmanageable if not controlled through pruning. Pruning is a very important practice to divert the flow of nutrients towards fruiting branches and force more fruiting. Pruning is done twice a year during the summer and winter seasons to maintain the balance between vine growth and fruit production. Pruning is done with the help of pruning shears. The use of pruning shears injure the hands of the workers. Long-time handling of pruning shears may cause work-related musculoskeletal disorders (MSDs). The workers work above the shoulder height which increases the risk for MSDs. Moreover, reaching vine at a far distance is also not possible due to the undulating terrain and height of the vines. Physical load on workers at varying intensities and repetitive movements increase the risk of muscle strength and hand-wrist disorders. The environmental parameters also affect workers during summer pruning. However, there is no appropriate and affordable tool. To overcome the drudgery associated with the farmer and replace the traditional method, a kiwi vine pruner was designed and developed. The developed pruner is light in weight. The cutting shear of the developed system can be operated manually by pressing the clutch wire or electronically via a DC motor by pressing the switch. The operation by DC motor does not hamper the manual operation using clutch wire.

Due to non-availability of appropriate and affordable pruner, the workers need to perform the task manually. The developed pruner can be operated manually as well as with DC motor. The present invention reduces drudgery of the workers, increases productivity and efficiency. The present invention helps to trim vines of kiwi in summer at proper distance to maintain the balance between vine growth and fruit production. It has its cutting shear (101) at the top to trim the vine, a long telescopic handle (105) of 1.2 m length to reach desired distance, motor (102) to regulate the speed of blades of the shear and a switch (106).

The battery assisted vine pruning device in Fig. 1 include a pruning shear (101) used to prune vines attached to DC motor (102), a pulley (103), a string (104), a handle (105), a switch (106) and a clutch (107) at the end of the handle. While operating the pruning device, a worker can hold the device by grabbing the handle (105) from one end, preferably towards the switch (106). Because the pruning device is lightweight, it is easy for the workers to hold the device without any physical pressure. The worker can switch on/off the device using switch (106).

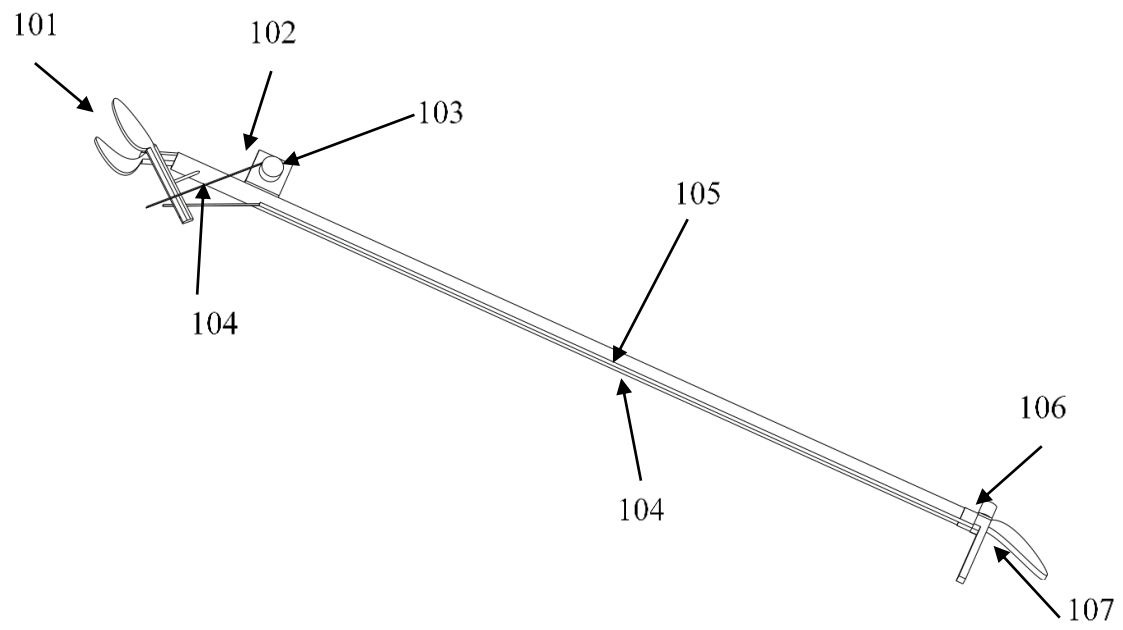


Fig. 1: Developed kiwi pruning device