California Avocado Society 1981 Yearbook 65: 77-79

"The Flying Fox" - A Device to Assist the Movement of Fruit Safely on Steep Hillsides.

Allan Campbell
Australian avocado grower and director at large of the California Avocado Society.

From the earliest days of commercial food production in areas of difficult terrain, growers have been faced with the problem as to how to move their produce from actual growing point to a point with easy vehicular access. Though the advent of four wheel drive has lessened the problem to a large extent, it is still with us today, and is compounded by the high, and ever increasing, costs of manpower, machinery, and fuel.

For many years, the banana growers on the steep hillsides in Eastern Australia have used a simple device which has proved most efficient in transporting bunches of bananas from various points on their very steep hillsides to suitable access points.

This invention is called a "Flying Fox." It was named, no doubt, after a type of flying bat with a voracious appetite and great capacity for removing large quantities of fruit from an orchard. The device consists of:

(1) Two heavy "carrier cables" (C and Cl) tightly strained between two anchor points, one on top of the hill (A) and one at receival point (Al), which carry the load.

(2) An endless cable called the "tail wire" (T) revolves around two large pulleys (P and PI), and is used to regulate the rate of descent of the load (D). It is controlled by a brake (B) on the lower pulley (PI) around which the tan wire is looped twice.

(3)The connection between the load "carrier" cable (C) and the revolving tail wire (T) is made using a simple hook and pulley bracket (H) and a 2'6" length of three-eighths" diam. rope formed into a loop (O).

To operate:

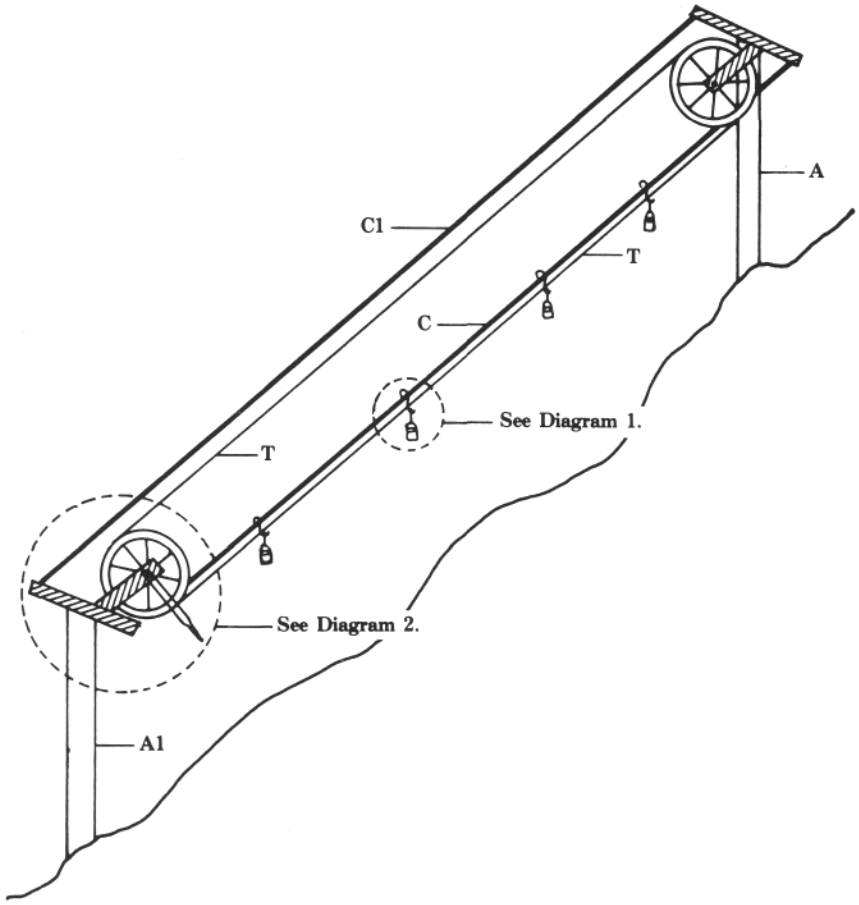
(1) The pulley (H) is placed on the carrier cable (C),

(2) The rope (O) is looped around the load (D) then passed around the tail wire (T) and the loose end placed on the hook. A signal is made by the "loader" to the "receiver" who then releases the brake and controls the rate of descent of the load. When the load reaches the bottom, the brake is applied to stop the load before it reaches the anchor point, and the load is then removed from the hook.

The hook and pulley brackets, ropes, picking bags, and even bags of fertilizer can be returned up the hill on the second carrier wire in similar fashion, as fruit is despatched down hill.

It will be appreciated that specifications as to size of cables and anchor points will be determined by the particular conditions in individual situations. Components to be considered are vertical height between despatch and receival points, length between

these points, intermediate despatch points, and overall weight of load. (A number of individual loads can be handled simultaneously). As a guide only, the main carrier cables are often 5 gauge high tensile wire; and the tail wires, No. 11 gauge wire. The pulleys are generally made from old motor cycle wheels, less tires and tubes, and utilize the original braking system.



Diagramatic View (not to scale) of "The Flying Fox."

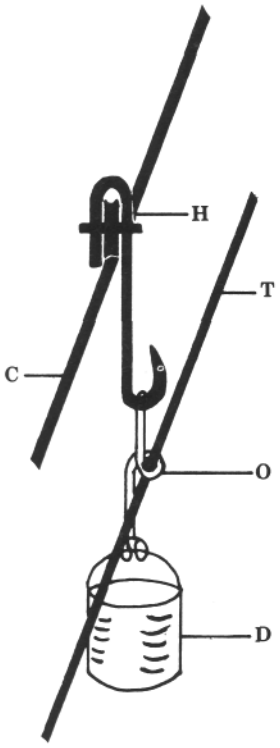


Diagram 1.

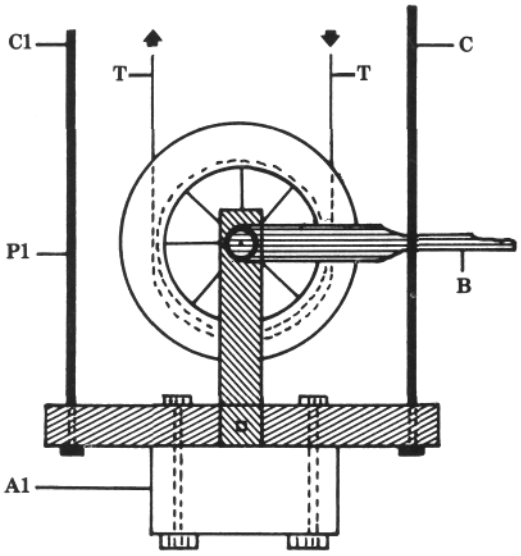


Diagram 2.