

The Wilder Rainthorpe Chopper

Origin

The Wilder Rainthorpe Chopper was originally designed to cut up straw and stubble to form a mulch to be ploughed back into the ground. With minor modifications its use has now been extended to include the disposal of gorse, bracken, bramble and, other vegetation with a stem diameter up to $1\frac{1}{2}$ inches.

Description

The machine consists of a two wheeled trailer carrying a rotor driven from the power take off of a standard tractor. This rotor carries two rows of tines each hinged on a bar running across the width of the machine. See photograph 1. The main feature is that, as the rotor revolves the tines are flung out radially under the action of centrifugal force. On striking a stump or any other obstacle the tines can fold back on their hinges to pass over the obstacle and then return to the operating position. The height of the rotor is adjustable so that the tines can be made to just strike the ground or run clear of the ground when in the operating (flung out) position. This adjustment is made to suit the type of vegetation to be cut. The machine cuts a 54 inch swathe.

The makers are:-

John Wilder Ltd.,

Wallingford,

Berkshire.

The price is £341. 5. 0.

Observations 1. The machine was tested when working on a private estate in Essex.

It was seen clearing bramble, bracken, blackthorn, light hazel and hornbeam coppice. Most of this vegetation was mixed with long grass etc. and in many cases formed an impenetrable obstacle to a man on foot.

A machine with distinct possibilities within a limited sphere. Might help (winter also) in deep ground for natural regeneration.

(i) *Devon* 12-14

(ii) *L. Packard*

(iii) *to C. J. B. 19/11*

(iv) *to Stock* 4/12

(v) *to M. C. Richardson* 17/12

(vi) *to Brimmer*

(vii) *Miss O'Shaughnessy*

Register P.A.

Destruction of all this vegetation was virtually complete and it was left on the forest floor in a shredded mass. A second run over the same ground resulted in a finer shredding but in no case would this have been necessary for planting trees.

2. Hidden stumps particularly the hazel stumps gave some trouble if they were more than eight inches high as they fouled the frame of the machine and caused a stoppage. Where stumps were lower than this they were not a serious obstacle. The tines were considerably bent by striking stumps but they appeared to remain quite effective.
3. The maximum stem size that the machine will cut regularly is $1\frac{1}{2}$ inches. In many cases where stems such as hazel birch and hornbeam exceeded this size they were bent over and cut off near the top where the diameter was under $1\frac{1}{2}$ inches. The bottom ends of the stems remaining in the ground were severely lacerated.
In a few instances stems considerably larger than $1\frac{1}{2}$ inches were cut through.
4. On bracken the machine was able to travel fast, limited only by ground conditions. The bracken was cut low and heavily bruised. It is reasonably certain that bracken so treated would return again the following year but if attacked at the right time and repeated according to the technique prescribed for bracken eradication it is probable that this machine provides a very economical method.
5. The machine was operated on slopes of 10° without difficulty.
6. The output rate of the machine on this trial was $\frac{1}{2}$ acre per hour on the types of vegetation mentioned at Observation 1. i.e. a mass of thorn and bramble up to seven feet high containing a number of saplings. The output rate on bracken would have been far higher but for the fact that the bracken covered ground was on a slope and very uneven.
The tractor operator is able to work without any outside assistance.

7. Reliability The trial covered two days work and during that time the following mechanical defects occurred:-

- (a) The jack built into the front of the machine (for raising it for attachment to the tractor) broke away from its welded attachment and fractured the drive shaft bearing cap. This was repaired by local workshops in 2 hours.
- (b) The near side protective casing was forced in, consequently, fouling the rotor. This was able to be levered out but it caused a stoppage of 2 hours.
- (c) A number of tines came loose during the trial owing to the securing nuts working loose. This caused two stops of 1 hour each.

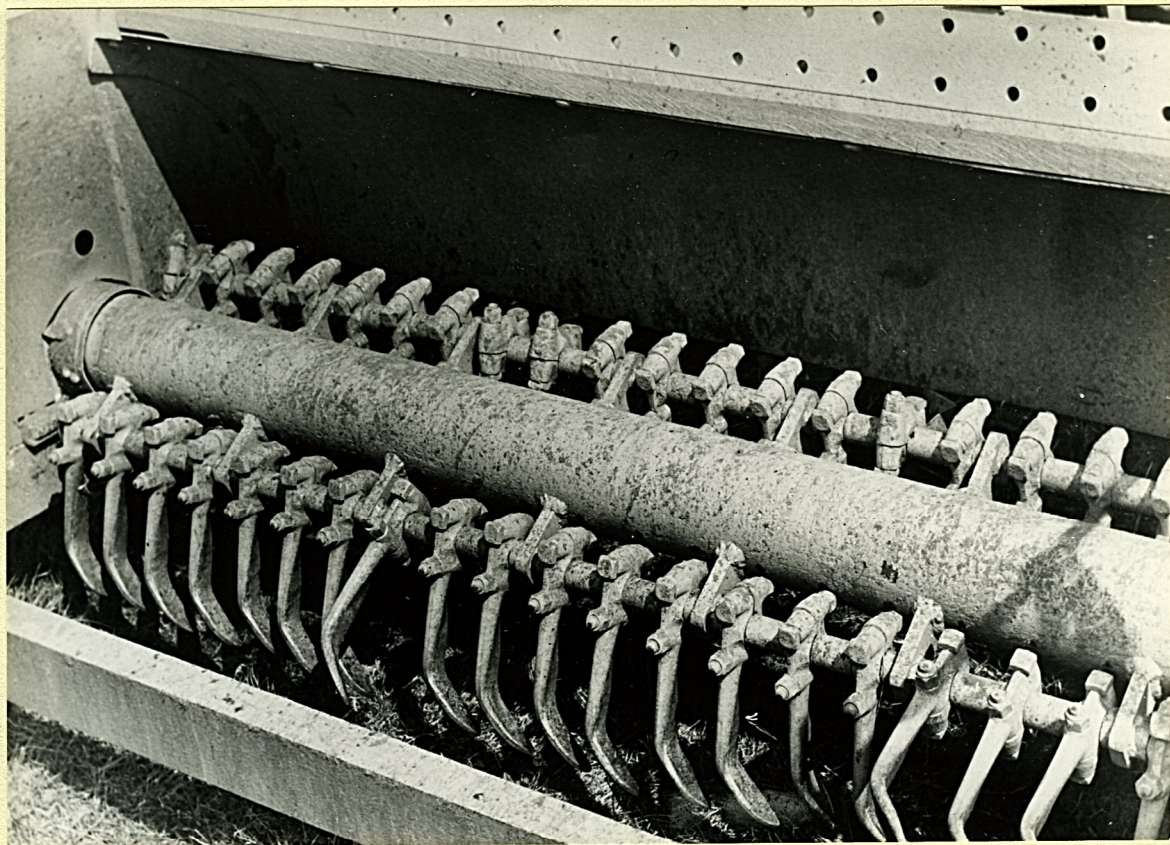
Conclusions

The Wilder Rainthorpe Chopper appears to be capable of disposing of any scrub vegetation through which a wheeled tractor can force its way. Saplings of $1\frac{1}{2}$ inches are about the strongest vegetation that can be effectively cut up.

Bracken and brambles offer little resistance and the rate at which they are destroyed is controlled by the state of the ground over which the tractor must pass.

Some mechanical weaknesses were revealed when the machine was operated continuously at or near its limit.

R. G. SHAW
Machinery Research Officer
November, 1956



Photograph 1. Showing the two rows of tines carried on the rotor across the width of the machine. As the speed of the rotor increases the tines take up a radial position but are easily knocked back on striking an obstruction.



Photograph 2. Showing the machine in operation.