

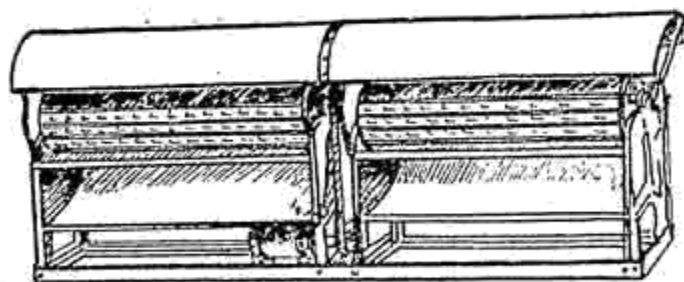
## Mechanised Paddy Thresher

by

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**Introduction :** The usual method of threshing paddy is by trampling the harvested crop by animal or by beating. Both these methods have the disadvantage of requiring much time and labour. Further, grains may often be broken of, some of them not threshed out or otherwise lost. The grains also become dirty by contact with the ground. Further it is difficult to thresh the non-shedding variety. The drawbacks could be easily overcome with the use of the paddy thresher. Hence the work of improving the existing paddy thresher was taken up and on perfection the work of mechanising the same was also initiated in the Research Engineering Workshop attached to Agricultural College and Research Institute, Coimbatore-3, in order to reduce the labour and to increase the outturn.

**Description :** This machine consists of a frame work, threshing drum and driven belt pulley (vide figure). The drum is fitted with a number of wire teeth. The top of the drum hood is covered with G. I. sheet. The unit is operated by 0.5 HP electric motor. The outer diameter of the drum is  $11\frac{1}{2}$ " and the inner diameter  $9\frac{1}{2}$ ". The length of the drum is  $39\frac{1}{2}$ " and the height of the drum from ground level is 28". The total number of the teeth provided in the drum is three hundred. The power is taken from the motor by means of belt pulley. The speed of the rotar can be altered by changing the size of the pulley. The thresher is light in weight, simple in construction, convenient to operate with no delicate parts to get damaged or fine adjustments to make.



MECHANISED PADDY THRESHER

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*Operation of working with the Machine :* Threshing is done by holding paddy sheaves in suitable bundle close to the teeth on rotating cylinder, which is kept in high motion by electrical operation. The sheaves are not passed through the machine; but are held by the operator at both the ends until the rotating drum has beaten out all the grains. The grains are thus instantly separated or combed from ears by the wire teeth on the cylinder. The threshed bundle is there laid aside and the operation is repeated. Since there is a hood at the top, the grains are not scattered but it is gathered at the bottom.

**Results and Discussion :** The trial with the mechanised paddy thresher was conducted at Regional Research Station, Aduthurai for finding out its performance and the efficiency as against hand threshing of the non-shedding exotic variety Tainan 3. The turn over of the paddy worked out to 44 bags per day of 8 hours in the thresher and 25 bags per day in hand threshing. The comparative cost of threshing for the above paddy worked out to about 16 paise per bag in the case of power thresher, as against 25 paise per bag in hand threshing. It is found that the thresher with a single 2 feet long spoked drum is capable of threshing grains from about 1.25 to 1.50 acres in a day of 8 hours.

The mechanised paddy thresher seems to be more advantageous and economical as it gives higher out turn at lesser working cost. The turnover of the unit is approximately 3,300 kg per day of 8 hours. The cost of two feet single drum unit is approximately Rs. 600/-

**Conclusion :** The mechanised thresher was found to work highly satisfactorily for threshing some of the non-shedding variety as Tainan 3, Taichung 65, Taichung Native 1 and I.R. 8. The difficulty for threshing the highly non-shedding varieties like Tainan 3 would appear to be no more a problem with the advent of the mechanised paddy thresher. The hood provided for the above thresher is very useful in preventing indiscriminate scattering. Further work to fix two drums to a single rotating shaft to get higher outturn is in progress. In addition to the above mentioned unit, another unit duly providing with winnowing arrangements to perform both threshing and winnowing in one operation are also in progress.

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