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Rice Thresher VITA Technical Bulletin No. 22

by: Bertrand Saubolle, S.J.

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VITA

TECHNICAL BULLETIN 22

Rice Thresher

BERTRAND SAUBOLLE, S. J.

This rice thresher is a combination of observations of and experiences with a variety of other plans and machines. Bertrand Saubolle, S. J., designed and built the first one out of scrap wood and junk for use at the Godavari School in Kathmandu, Nepal.

Father Saubolle has been involved for years with designing low-cost machinery and equipment for agriculture and food processing. He is also interested in energy production through wind, water, sunshine and methane. Several other bulletins in this series are based on his designs.

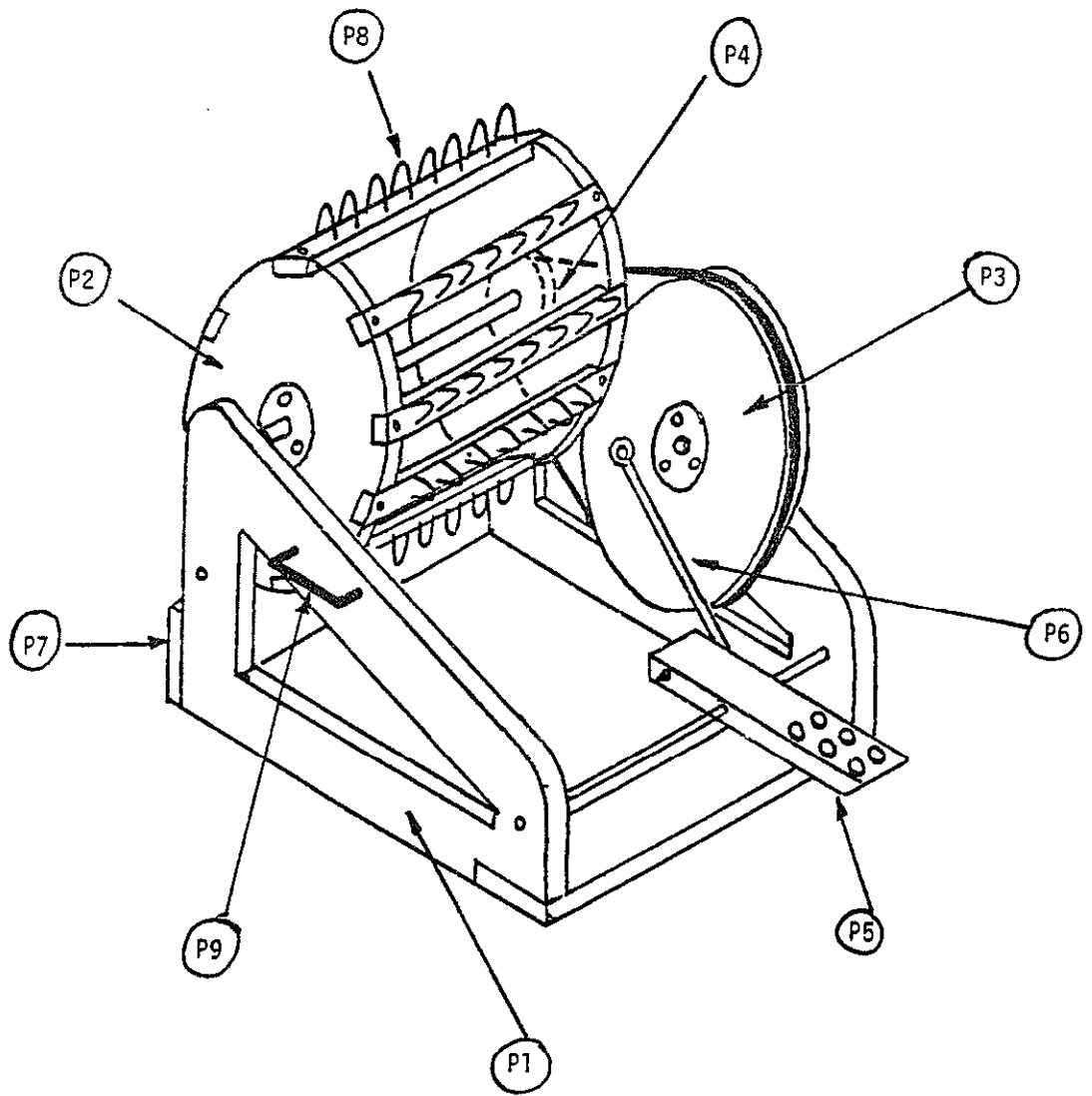
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The design of this Thresher is based partly on a small Japanese thresher seen in India, partly on ideas arising out of diverse thresher plans provided by VITA, and partly on the constructor's originality. Designs for more sophisticated threshers abound. This one aims at simplicity of construction, ease of operation and lowness of cost, combined with rapid and thorough threshing. It was built from scrap wood, junk rods, bits of pipe, an old bicycle pedal, discarded motor bearings, and so forth.

Material Requirements:

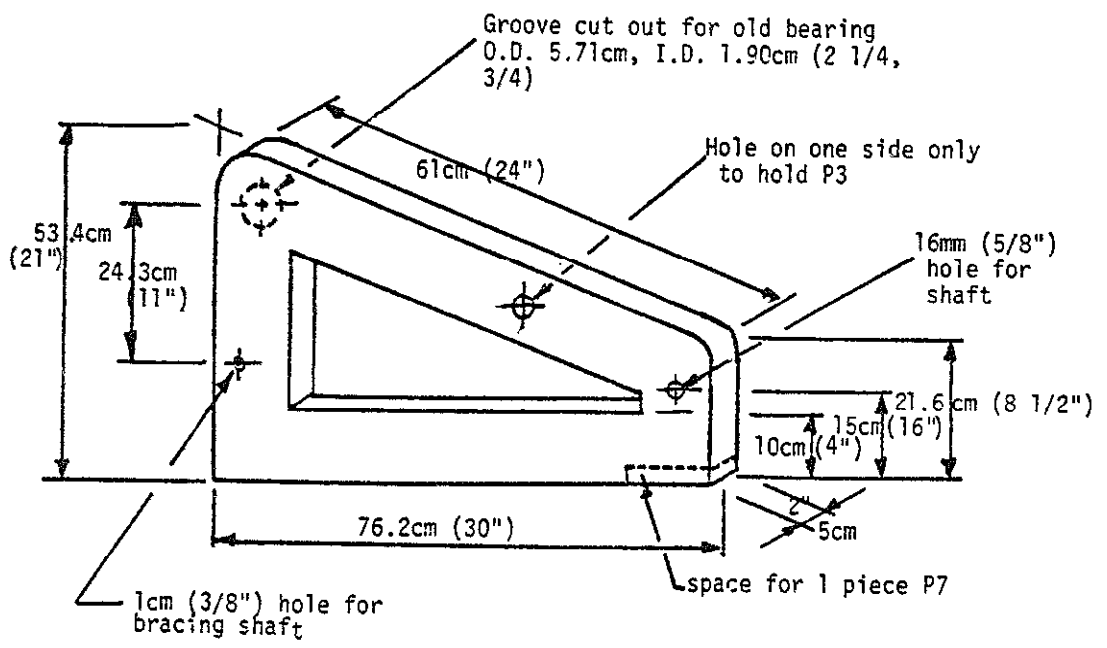
P1	2 pcs
P2	1 pc
P3	1 pc
P4	1 pc
P5	1 pc (2)
P6	1 pc
P7	2 pcs
P8	96 pcs
P9	2 pcs
Screws to hold P7, 4cm (1 1/2')	8 pcs
Screws to hold 12 slats to P2, 4cm (1 1/2")	24 pcs
Rubber studs for P5	6 pcs
Bolts for holding pipe-flanges on P2, 1 x 4.5cm (3/8" x 1 3/4")	3 pcs
Bolts for holding P4 and flange on P2 right side, 1 x 7.5 cm (3/8" x 3")	3 pcs
Pipe flanges on driving side of P3 which are fastened to right side of of P1 with 1/2" pipe to act as bearing	2 pcs
Handles P9 made of rods to carry machine here and there	2 pcs
Bolt to fit into 1/2" pipe to hold P3 on right side solid but free turning	1 pc
Rod for P2, 19mm x 59.7 cm (3/4" x 23 1/2")	1 pc
Rod for holding P5 and will act as strengthening for P1, 1.6 x 65cm (5/8" x 25 1/2"). After placing P5 into position be sure you place 2 flanges on each side of P5 to hold same in position, bolting flanges into 1.6cm (5/8") rod	1 pc
V-belt, 1.3 x 154cm (1/2" by 62") long, measuring on top. Since no pro- vision is made for adjusting belt, be sure before you drill hole to P1 for holding P3, that you fit belt tight, otherwise it will slip	1 pc

Important: When placing P8 into slats, first drill 2.4mm (3/32") holes, then hammer the P8 into holes. Be sure they do not line up on next slat but are positioned alternately so that all are at work when machine is running.

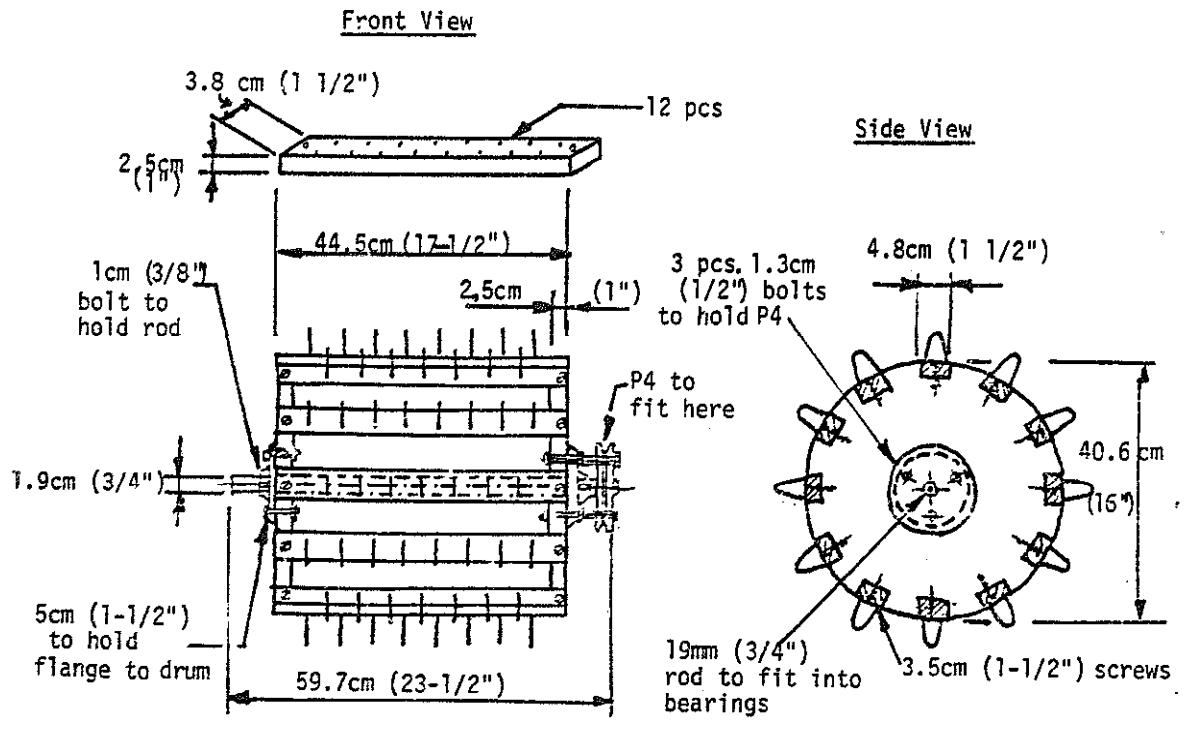
After assembling parts, drum will run smooth and free. When placing all parts together, a slight push by hand to start drum rotating will then permit foot movement which will also be very easy. One can then hold a sheaf of rice to be cleaned, while pumping without any difficulty.

The rice thresher was tried out in the villages around Godavari (Kathmandu Valley, Nepal). The farmers vied with one another to use it. Comments were: It is faster and less tiring than the traditional hand threshing; it is definitely more efficient since it detaches every single grain. It is awkward to carry (they don't use the handles, but sling the thresher upside-down by the frame on a bamboo pole which they place on their shoulders). The pedal is too narrow (I recommend a second pedal on the left with a wooden bar joining the two).

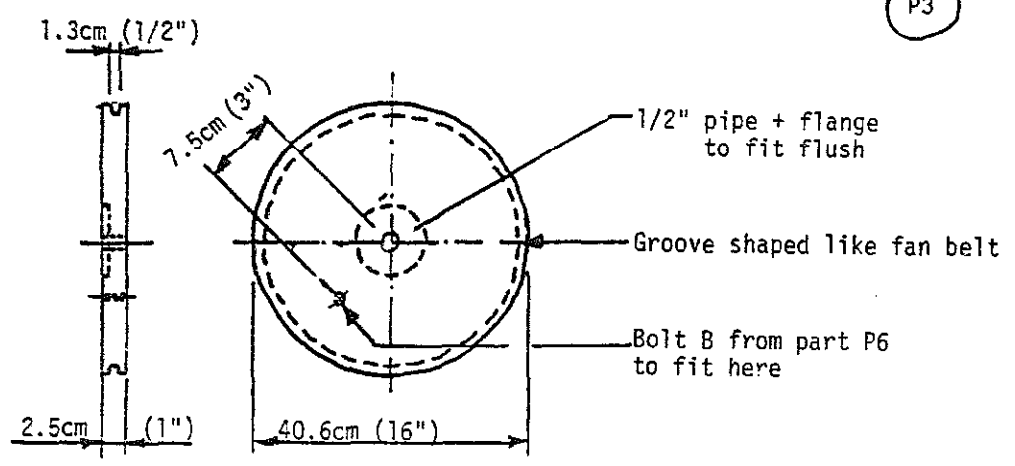
P1



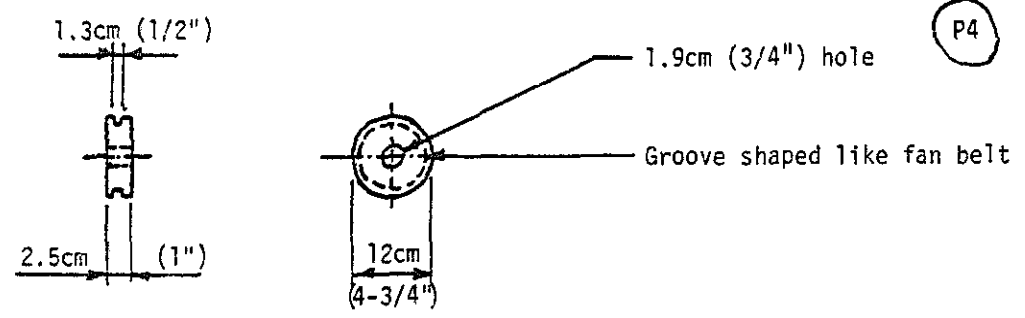
P2



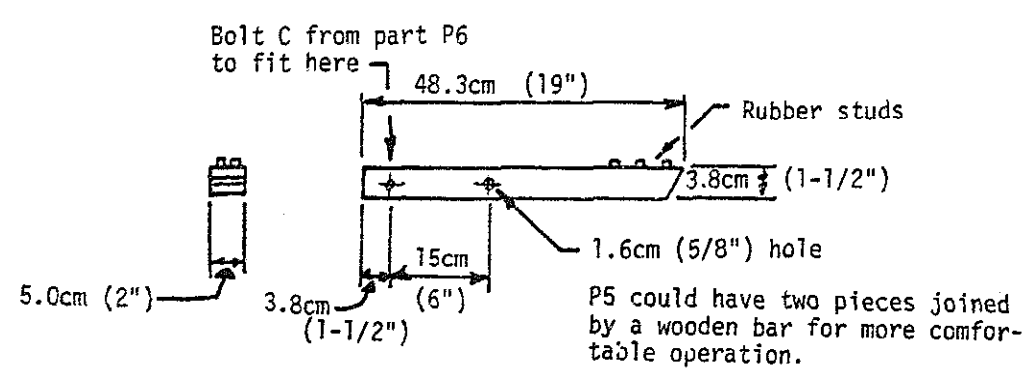
P3



P4

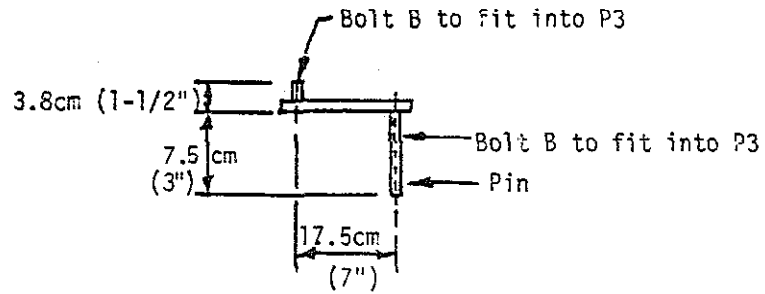


P5



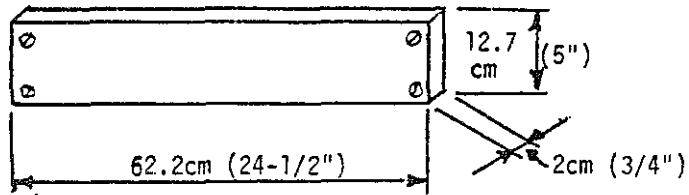
P6

Old Bicycle Foot Pedal



P7

Wooden supports for frame
with 4cm (1-1/2") screws.



P8

