Two wheel tractor newsletter March 2012

Is this one of the ancestors of the modern two wheel tractor?





This is a 1929 Centaur tractor made in Ohio USA. It had an 11 HP petrol motor and weighed 600 Kg. Go to Google search for more information.

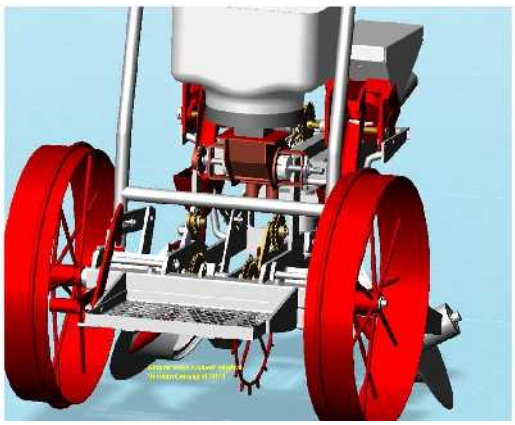
Progress with angled single disc opener which is pushed.



Our French colleagues have come a little further with the development of an angled single disc opener seed drill, which is pushed through the soil.

There was an item on the principles of this seed drill in the Jan-Feb. newsletter.

The main R. & D. work is being done by FERT. which is a French farmer NGO. FERT is assisting in foreign aid work in Africa. They have a website at http://www.fert.fr/discover-gb/.
The principal designer of this unit is a guy called Anicet Marionneau . I received details from Bruno Vadon, who is also associated with the project.



This illustration shows the layout of the unit as seen from the back. Although designed for animal traction, I am sure that this concept can be adapted to fit under the tool bars of a 2WT fitted with an ARC Gongli seed drill. As the disc openers are pushed, there is little need for extra weight to ensure proper penetration.

Visit to University of South Australia, Mawson Lakes Campus.

I had the opportunity recently to visit Dr. Jack Desbiolles at this campus in Adelaide, South Australia. I also met Abdul Matin, graduate student from Bangladesh, who is doing a project on rotary tillage with 2WT as part of Jack's team.

There is an impressive group at the University with several academics, students (both undergrad and post grad), and visiting scientists working on Ag. Eng. R. & D. and associated environmental matters.



Here is Jack with Matin posing in front of the 2WT fitted with a modified 2BG-6A rotary seed drill. This is the unit originally fabricated by Chris Holland of Rogro Machinery in Spring Ridge NSW Australia.



Jack carries out adjustments to the seed drill before giving a practical demonstration. The seed drill is currently set up to sow four rows of close-drilled crops





Note how Jack and Matin have made up a new axle, which holds the tiller blades. There are eight blade holders at each site, and various configurations of left hand, right hand, straight and angled blades can be fitted. Depending on the configuration used, different widths of slots can be cut, as well as various slot shapes.



Jack kindly did a demonstration run with the modified rotary seed drill in a grassed parking lot at the rear of the Ag. Eng. workshops. The seed drive was disconnected for the demonstration. (I am not sure what the University Lawn and Grounds staff thought)



Here is the test result. Four different tiller blade arrangements are on the shaft with four different outcomes. Some soil has been hollowed out of portion of each strip to determine the slot shape being cut. The strip on the left is 100 mm. wide and the other three are each 50 mm. wide. The side-by-side blade settings were of decreasing soil disturbance levels from left to right, as seen in the picture. There is also a visual trend in reduced soil throw as well as a gradually improving furrow backfill.
The tiller blades were set at 50 mm depth, and the seeding tines were raised out of the strip till zone for the evaluation.



Jack has also recently received a National Agro. 2WT seed drill from India. This drill was featured a few months back. However it has to be unpacked and assembled to a 2WT rotavator. Jack will then try out this machine.

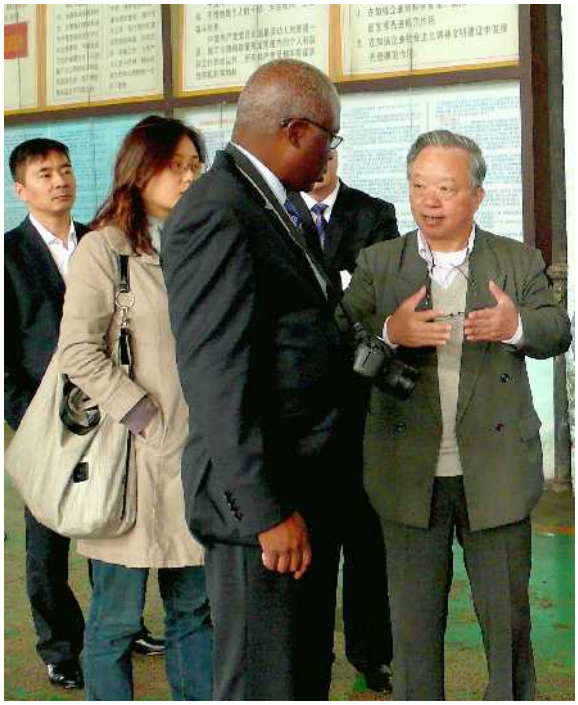
Visit to Toowoomba Queensland – University of Southern Queensland and Sow-Ezy Farm Machinery.

I spent a few days in Toowoomba, and visited with Dr. Guangnan Chen at USQ. Guang is a senior lecturer and Deputy Head of the Ag. Eng. Department at USQ. He supervised student Mark Fraser who did the computer simulated stress analysis of the 2WT tined seed drill (ACIAR-Rogro and ARC Gongli design). There is a possibility that some USQ Ag. Eng. students may undertake some 2WT projects in the future. Guang is a member of our forum.

I also visited the workshop of Des Mason of Sow-Ezy Farm Equipment in Toowoomba. Des supplies some of the disc parts for various prototypes, and also has given advice in the design of small seed drills. Des is at http://www.sowezy.com.au/

Change of details – Mr. Sun Liangjun.

Mr. Sun Liangjun, the manager of the 2WT Division of Dong Feng Agricultural Machinery Company in Changzhou has changed his email address. He may now be contacted at sljdfeng@gmail.com.



Mr. Sun is a regular contributor to the forum, and has also supplied 2 wheel tractors, implements, parts and other items to various research workers. He is currently arranging the freighting of three ARC Gongli seed drills to research projects in Cambodia, Laos, and Thailand. I very much value his support and advice.

This is a recent picture of Mr. Sun having a discussion with a delegation from Namibia prior to showing them through the Dong Feng 2WT factory in Changzhou.

Does this newly patented design have a role to play as a disc opener system for a 2WT?

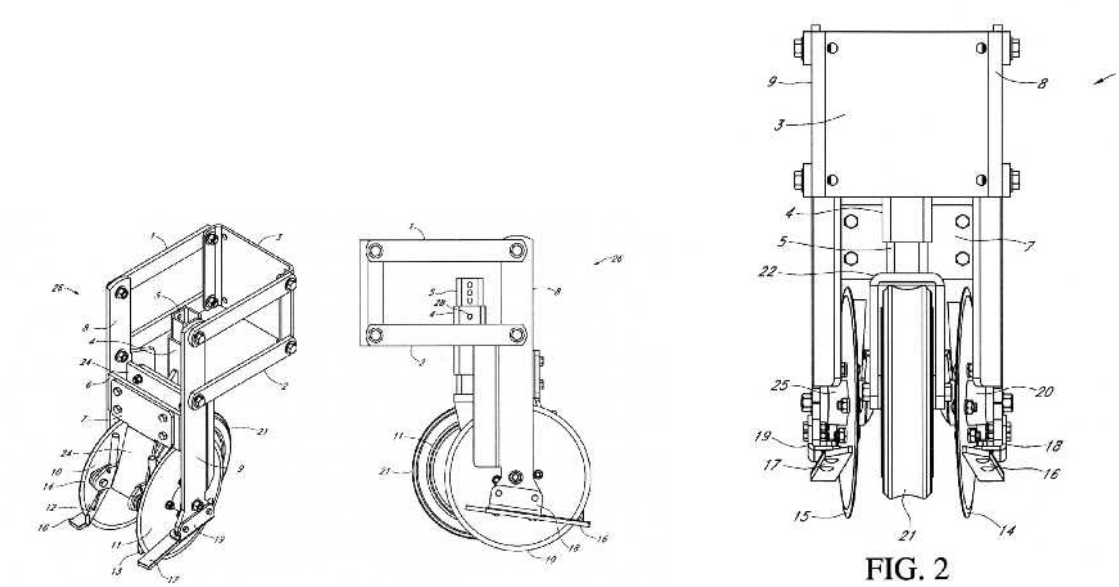


FIG. 2

This paired single disc opener system has recently appeared as a patent on Google.
See:
http://www.google.com/patents/about/12_192_616_Paired_Single_Disc_Opener_Uni.html?id=kBexAAAAEBAJ

The paired discs are on a parallelogram set-up, which is pulled through the soil. The discs are set 16-20 cm. apart. A central gauge wheel set between the discs controls the depth of operation.

Will this idea work when we have a pair of discs, which are *pushed* through the soil, similar to the FERT. system described earlier?

A pair of discs, set 60-75 cm apart, on a parallelogram being *pushed* will cancel out the side forces generated by each disc, and the central gauge wheel allows easy depth control. Add in both adjustable offset and tilt systems and we have possibly an extremely versatile single disc opener system. What do you think?