An Electric Device for Recording Distribution of Seed From Planters

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In cooperation with Dow Chemical Company, the Farmers and Manufacturers Beet Sugar Association has developed an electronic device for recording the distribution of seed from a planter.

This device consists of:

1. A flat surface microphone placed directly beneath the discharge tube of a planter and at a 45-degree angle to the lube. Seeds fall from the tube, strike the microphone disc, and then because of the 45-degree angle bounce clear. This method permits a slight error because a seed falling from one side of the tube must fall a distance equal to the inside diameter of the tube farther than a seed falling from, the other side of the tube. However, the time necessary to fall this additional fraction of an inch is not sufficient to interfere with the proper interpretation of the results.

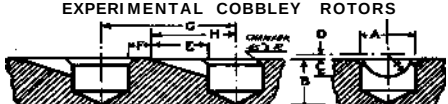
2. The sound impulse of the falling seed on the microphone is transmitted to an electronic amplifier (Brush Development Co. Type OA-2).

3. The amplifier sound impulse is then transmitted to an oscillograph (Brush Development Co. Type PO-4).

4. The impulses are then recorded on the oscillograph paper in the form of a staggered line, a peak being recorded as a seed piece strikes the microphone. The heavier the seed the greater the sound impulse, with a correspondingly longer peak recorded on the oscillograph paper.

By determining the rotor r.p.m. and the travel of the oscillograph paper in feet per minute the number of impulses which should occur in 1 foot of oscillograph paper can be calculated, as well as the dis-

EXPERIMENTAL COBBLEY ROTORS



DRILL POINT TO HAVE 118-120° INCLUDED ANCLE. HOUSING "A" TO HAVE STRAIGHT CUT-OFF AND HOUSING "B" TO HAVE CUT-OFF AS ON SKETCH.

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tance between impulses. Thus the actual number of seed pieces metered per revolution of the metering device can be determined, along with the actual seed pattern and spacing design as recorded on the oscillograph paper.

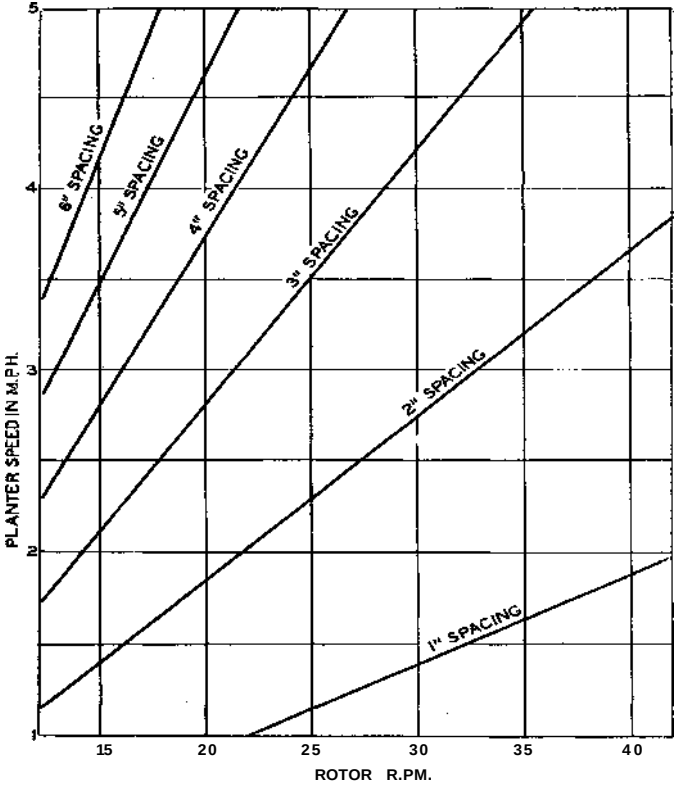
Rotor No.	For seed size	For use in housing
Ex 1	7-9	A
Ex-2	7-9	B
Ex-3	31-13 T	A
Ex 1	13-13 P	B
Ex 5	11-13 P	A
Kx-G	11-13 P	B
Ex-7		
Ex-S		
Ex-9		
Ex-10		
Ex-11		
Ex-12		
Ex-13		
Ex-14		
Ex-15		
Ex 16		
Bx-17		
Ex-1S		

Dimensions in (Mths

F. & M. beet sugar—Saginaw.

Test No.	Rotor No.	Cut-off style	Clearance Between cut-off and rotor	Seed or pellet size	Pellet base	Rotor r.p.m.	Percent Broken in rotor	Percent cells filled	Seeds per 100 cells
1	Factory built		.005	7-9		13.7	21.76		149
2	Factory built		.005	7-9		34.0	24.08		137
3	Ex-1	A	.003	7-9		34.0	19.06		107
4	Ex-1	B	.003	7-9		34.0	14.80		134
5	Ex-2	A	.003	7-9		34.0	9.63		99
6	Ex-2	B	.003	7-9		34.0	14.08		80
7	Ex-2	B	.003	7-9		13.7	21.54		164
8	Ex-3	A	.003	11-13	Flyash-feldspar	34.0	17.86		94
9	Ex 3	B	.003	11-13	Flyash-feldspar	34.0	14.51		96
10	Ex-4	A	.003	11-13	Flyash-feldspar	34.0	35.12		94
11	Ex-4	B	.003	11-13	Flyash-feldspar	34.0	13.52		88
12	Ex-5	A	.003	11-13	Flyash-feldspar	34.0	16.78		90
13	Ex-5	B	.003	11-13	Flyash-feldspar	34.0	17.26		94
14	Ex-6	A	.003	11-13	Flyash-feldspar	34.0	29.58		89
15	Ex-6	B	.003	11-13	Flyash-feldspar	34.0	14.48		93
16	Ex-6	B	.003	11-13	Flyash-feldspar graphite coat	34.0	7.96		101
17	Ex-6	B	.003	11-13	Flyash-feldspar graphite coat	13.7	9.05		100

Pelleted Segmented



Indications sire that each Cobbley unit (consisting of rotor and housing) has an optimum rotor rp.m. at which optimum speed it dispenses approximately 100 seeds per 100 cells and causes the least damage to the seed. When this optimum rotor r.p.m. has been determined for an individual Cobbley unit and the desired seed spacing is known, the correct planter speed in in.p.h. for the optimum rotor speed can be determined from the chart shown hero.