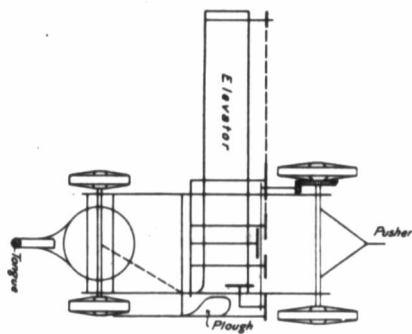


whose solidities are given by the following formulae: Area of right section $\times \frac{1}{3}$ sum of lateral edges.

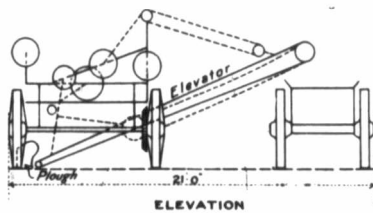
C (Fig. 7) can be divided into pyramid and tetrahedron:

$$\text{Solidity of Pyramid} = \frac{\text{Area } X}{\cos \theta} \times \frac{1}{3} (\text{half breadth} - \frac{1}{2} \text{ roadbed})$$

$$\text{Solidity of Tetrahedron} = \frac{1}{3} \text{ depth at M} \times (\text{half breadth} - \frac{1}{2} \text{ roadbed}) \times \frac{1}{2} \text{ roadbed of road crossing.}$$



PLAN
Fig. 9



ELEVATION
Fig. 10

Grading Machines.—Figs. 9 and 10 are diagrammatic plan and rear elevation of a grading machine, manufactured in Chicago.

This machine requires 42 ft. to work in, but has a 3 ft. extension section on the elevator, so that when required, this can be removed, making it capable of working in a 36 ft. cut. With sand or loose material, however, the extra height to which the elevator has to be raised to properly clear wagons, exceeds the workable angle of repose of the material, and it refuses to elevate.