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R. E. WADE

2,834,446

SEED DISTRIBUTING SHOE

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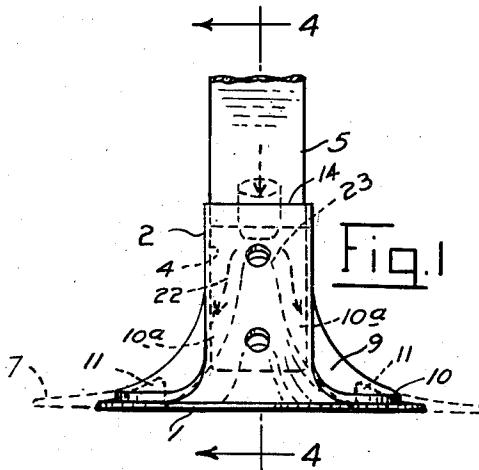


Fig. 1

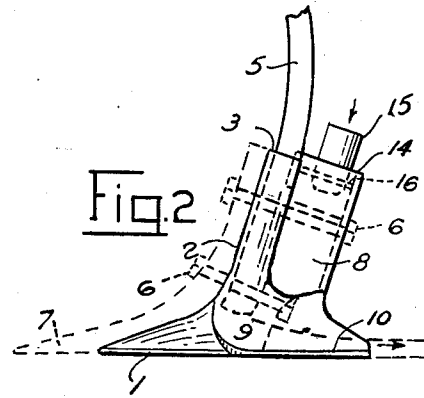


Fig. 2

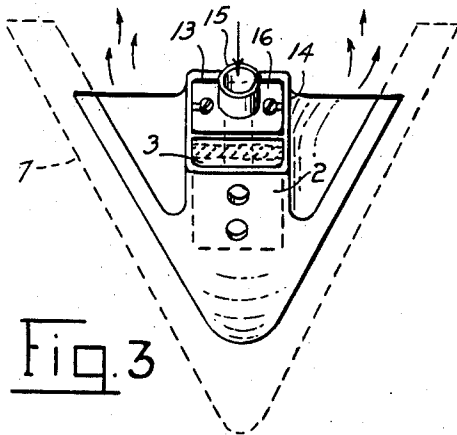


Fig. 3

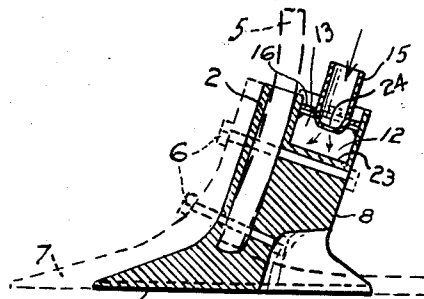


Fig. 4

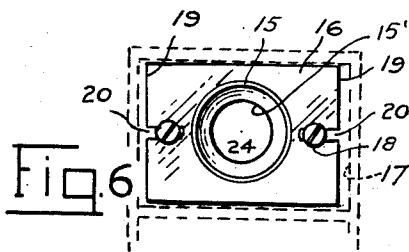


Fig. 6

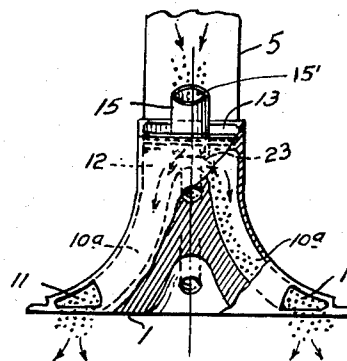


Fig. 5

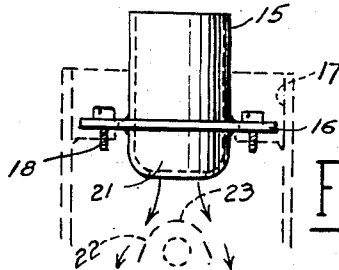


Fig. 7

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## SEED DISTRIBUTING SHOE

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1 Claim. (Cl. 193—9)

My invention relates to new and useful improvements in cultivating and seed distributing shoes, the principal object of my invention being to provide a device of the character herewithin described in which seed grain may be distributed behind the shoe as it passes through the coil.

A further object of my invention is to provide a device of the character herewithin described which is adapted to be used with a conventional duck foot cultivator which fits over the shoe, the configuration of the shoe being designed to suit the attachment of said duck foot cultivator.

Another object of my invention is to provide a device of the character herewithin described which includes means whereby the stream of grain entering the shoe is divided in two equal parts, each stream being directed to the outer training corners of the distributing shoe, and such equal division being maintained regardless of whether the shoe travels on a horizontal level or inclined as on a slope.

A further object of my invention is to provide a device of the character herewithin described which is adapted to be secured to the conventional standard of a cultivator and which, furthermore, is economical in manufacture and otherwise well suited to the purpose for which it is designed.

With the foregoing objects in view and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is a front end view of my device.

Figure 2 is a side elevation of Figure 1.

Figure 3 is a top plan view of my device.

Figure 4 is a section substantially along the lines 4—4 of Figure 1.

Figure 5 is a rear elevation of my device sectioned in part to show the interior thereof.

Figure 6 is an enlarged fragmentary top plan view showing the means of attachment of the inlet tube to the supporting column.

Figure 7 is a front elevation of Figure 6.

In the drawings like characters of reference indicate corresponding parts in the different figures.

Reference to the accompanying drawings will show that my device consists of a substantially triangular base portion 1 having an upstanding supporting column 2 which is apertured as at 3 to receive the lower end 4 of a conventional cultivator standard 5, said column being secured to the standard 5 by means of bolts 6 passing through the column and through the standard as clearly illustrated. The configuration of the front portion of the column and the upper portion of the shoe is adapted to suit the configuration of a conventional duck foot blade shown in phantom and indicated by the reference char-

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acter 7, the afore-mentioned bolts 6 also securing this cultivator to the distributing shoe.

The rear side 8 of the column is provided with outwardly flaring sides 9 which mould into the broadened rear side 10 of the base 1, and reference to Figure 5 will show that these flaring sides 9 are formed with diverging apertures 10<sup>a</sup> that terminate at the lower ends thereof with what I define as discharge apertures 11, one upon each side of the base 1. The apertures 10<sup>a</sup> conjoin as at 12 and communicate with a substantially vertical aperture 13 formed in the upper face 14 of the supporting column just rearwardly of the aperture 3 carrying the standard 5.

A grain inlet tube 15 secured to a transverse supporting plate 16 is mounted in this aperture 13, the plate 16 spanning the side walls 17 of the aperture 13 and being secured thereto by means of screws 18. In this connection, it will be noted that the sides 19 of the plate 16 are slotted as at 20 to provide limited sideways adjustment of the inlet tube, the purpose of which will hereinafter be described.

Immediately below the lower end 21 of the inlet tube 15 is formed an upstanding dividing saddle 22, said saddle flaring upwardly and inwardly and constituting the inner walls of the afore-mentioned apertures 10<sup>a</sup>. It will, therefore, be seen that the afore-mentioned transverse adjustment of the inlet tube 15 permits the lower end 21 thereof to be positioned over the apex 23 of the dividing saddle 22 so that grain passing downwardly through the inlet tube 15 will be divided equally into two streams to flow down the apertures 10<sup>a</sup> within the flaring sides 9. The saddle 22 has its upper portion semi-circular as viewed in transverse section.

It will also be noted that the discharge end 24 below the transverse plate 16 is restricted in diameter, thus fanning out the grain passing therethrough and assuring a more even distribution when same strikes the dividing saddle 22. This restriction consists in cupping or curving inward the lower end of the inlet tube 15. When the shoe is tilted seed passing down the inlet tube travels on the lower side of the tube, but as it is discharged over the inwardly curved lower end of the tube it is caused to bound up slightly and inward, so that the seed strikes on the part of the saddle 22 that is uppermost at that time and divides evenly between the two apertures 10<sup>a</sup>. Further, the seed in passing over the curved portion of the inlet tube on to the saddle and down the flared apertures 10<sup>a</sup> is given a swirling motion that materially assists in spreading the seed as it discharges from the outlets 11.

In operation, the inlet tube 15 is connected to a convenient source of supply such as a seed grain box (not illustrated) and the duck foot cultivator is secured to the distributing shoe as hereintofore described.

As the shoe and cultivator pass through the soil, seed is fed through the inlet tube, onto the dividing saddle, and then to the two apertures 10<sup>a</sup> to be discharged rearwardly of the shoe in two evenly divided streams, thus ensuring accurate and efficient seeding. This even division of the seed is maintained when the shoe is tilted, as on side hill work, by the action of the inwardly curved outlet of the tube 15 in diverting the seed inward from the lower side of the tube so that it strikes the uppermost portion of the saddle 22.

In conclusion I would refer to the configuration of the lower end of the inlet tube 15, which will be seen to curve inwardly, as indicated at 15', terminating in an outlet 24. This inwardly turned portion 15' is concavely curved as viewed from within the tube and consists of an annular downwardly inclined ledge portion and the outlet 24 is of considerably less diameter than the diameter of the tube

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at the start of the inwardly turned portion. This outlet diameter, while not strictly limited to precise proportions, has been found most effective when approximating two thirds of the diameter of the tube 15 at the start of the inwardly curved portion, with the curve of the portion 15' starting at a distance from the lower end of the tube approximating the radial distance between the outlet 24 and that part of the tube 15 at the start of the curved portion 15'. This inwardly curved portion 15' is of particular importance when this unit is used, for example, on the sides of hills or the like inasmuch as it still divides the grain evenly. As grain runs down the "low" side of the tube 15, it strikes the inwardly curved portion and is deflected outwardly towards the other side of the tube, thus giving a uniform seeding distribution irregardless of the angle of tilt of the machine due to the angulation of the ground upon which it is being used.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claim without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

A seed distributing shoe of the character described pro-

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viding a base portion and upstanding column on the base portion, said column having diverging apertures extending downward therethrough terminating in rearwardly directed outlets and a further aperture in the upper part thereof communicating with the diverging apertures, the portion of the column between the diverging apertures forming a dividing saddle semi-circular throughout its length as viewed in transverse section, and the further aperture having a seed inlet tube mounted therein, said tube having its lower end turned inward to provide an annular downwardly inclined ledge portion concavely curved on its upper side and terminating in a delivery outlet of less diameter than the body of the tube at the start of the ledge portion.

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