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R. H. McCLELLAND.

CONTRIVANCE FOR REGULATING THE DISTRIBUTION OR FEED OF GRAIN, &c

APPLICATION FILED MAY 12, 1903.

NO MODEL.

Fig. 1.

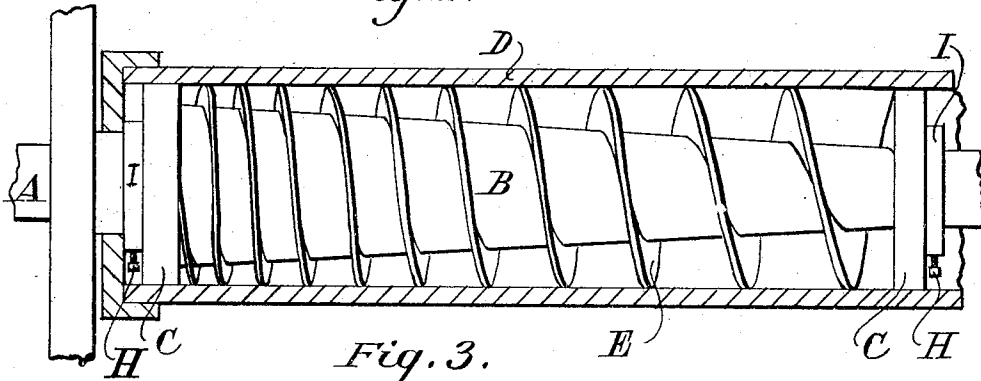


Fig. 3.

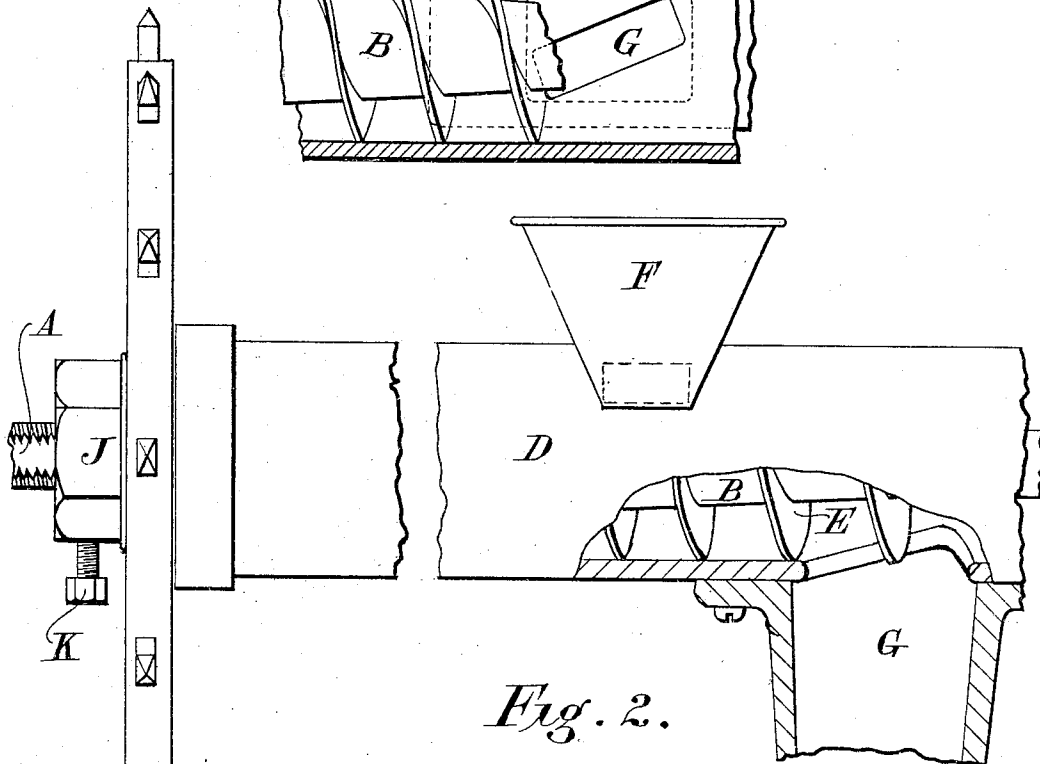
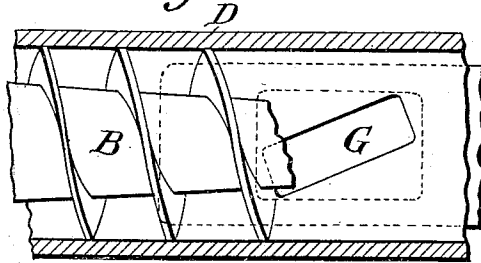


Fig. 2.

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UNITED STATES PATENT OFFICE.

ROBERT HAWTHORN McCLELLAND, OF NATHALIA, VICTORIA, AUSTRALIA.

CONTRIVANCE FOR REGULATING THE DISTRIBUTION OR FEED OF GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 767,762, dated August 16, 1904.

Application filed May 12, 1903. Serial No. 156,783. (No model.)

To all whom it may concern:

Be it known that I, ROBERT HAWTHORN McCLELLAND, farmer, a citizen of the Commonwealth of Australia, residing at Nathalia, State of Victoria, Australia, have invented a new and useful Contrivance for Regulating the Distribution or Feed of Grain, Seed, Manure, Crushed Quartz, Coal, and other Material, of which the following is a specification.

This invention has been devised in order to provide a simple and inexpensive yet thoroughly-efficient contrivance which will enable grain, seed, and manure to be distributed to the drills of seed-sowing machines or which will enable crushed quartz, coal, and the like to be fed to retorts, batteries, or other machinery or which can be applied in a vast number of instances where material of a certain size is required to be delivered in regular quantities to any desired feeding or other distributing contrivance. With this contrivance, moreover, the quantities of material delivered or distributed in a given time can be regulated at will in a very simple manner, or, if desired, it can be adjusted to alter the size of the material delivered by it.

In order, however, that my invention may be readily understood, I will describe it by reference to the accompanying drawings, in which—

Figure 1 is a view of my improved contrivance with the casing thereof in longitudinal horizontal section, while Fig. 2 is a view of the same in side elevation, partly sectional. Fig. 3 is a detail view with the casing or cover D in horizontal section and with part of the conical axis or base and its screw broken away, showing the outlet by which the material is discharged from the said casing or cover.

The same letters of reference indicate the same parts in all the figures.

A represents a shaft or spindle which may either be square or otherwise sided, or it may be formed with a keyway or feather registering with a corresponding key or slot in the conical axis or base B of my improved regulating contrivance. This latter consists, as shown in the drawings, of said conical axis or base B, having at each end a circular flange C C, fitting within the casing or cover D,

forming the feed-cylinder, and formed with an Archimedean screw of gradually-increasing depth of thread and gradually-increasing width of space between the threads E.

F represents, by way of example, the inlet or feed box of a grain-distributing or seed-sowing machine, the inlet-aperture being formed in the side of the cylinder D, while G represents the discharge chute or outlet of said machine. The inlet and outlet are not arranged opposite one another, but one thereof is located to one side of the other thereof, as shown, the screw E being used to convey the grain or other material from the inlet F to the outlet G. These latter should usually be set a distance apart equal to the greatest pitch of the thread, and said discharge-opening is preferably made oblong in shape, as shown in Fig. 3, and in order to insure a regular discharge of material is formed at an opposite angle to the threads of the feed-screw, as in said figure. The conical axis or base B is secured upon the drive shaft or spindle A in any desired position by means of set-screws H H passing through collars I I upon said axis. It is evident that if the conical axis or base carrying the screw E is clamped upon the shaft A in such a position as to bring the wider and deeper threads under the feed-hopper F larger material or larger quantities of material, as the case may be, will be conveyed from the feed-hopper to the chute G. If the conical axis or base B is shifted so as to bring the shallower and narrower threads under the feed-hopper, then a smaller quantity of material or smaller-sized material will be delivered, and particles or pieces of crushed quartz or other material which are too large to enter the spaces between such threads where exposed at the feed-hopper will be retained within the supply-hopper. Provision can be made, as will be readily understood by engineers and skilled mechanics, for sliding the spindle A to one side or the other, carrying with it the conical axis or base B and screw E, and thus varying the feed according to requirements. For instance, in a seed-sowing machine one of these conical feed-screws could be used for each drill and the whole of the screws would be mounted upon a single shaft

or spindle, so that they could all be moved simultaneously by means of a lever or of an adjusting-nut J, as shown in Fig. 2, or otherwise, as required.

- 5 The adjusting-nut J, if used for shifting the feed-screws as indicated in Fig. 2, may be locked, by means of a set-screw K, to the spindle A. The threads corresponding with the nut J may be cut around the corners of
10 the square or other sided spindle.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A device for regulating the distribution or feed of grain, seed, manure, crushed
15 quartz, coal, or other material, consisting essentially of a conical axis or base with a thread of increasing depth and distance apart, said axis or base being mounted upon a spindle and adjustable endwise, substantially as and
20 for the purposes specified.

2. In a grain or other feed mechanism, a cylinder provided with a feed supply or hopper, and with a delivery-chute set a short distance to one side of the feed-supply and opening directly from the under side of the main

portion of the length of the casing, in combination with an Archimedean screw fitting the interior of said casing and extending across the opening of said chute, the said screw having gradually-increasing depth of threads and
30 gradually-increasing width between said threads, substantially as and for the purposes specified.

3. In a grain or other feed mechanism, a cylinder provided with a feed supply or hopper, and with a delivery-chute set a short distance to one side of the feed-supply, in combination with a spindle, a conical axis or base on said spindle with a thread of increasing
35 depth and distance apart, and means to adjust said axis or base endwise for the purpose of regulating the distribution or feed, substantially as and for the purposes specified.

Signed at Melbourne this 30th day of March, 1903.

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Witnesses:

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