Oct. 29, 1929. A. F. COTNER 1,733,722

LIME DISTRIBUTOR

Filed Dec. 20, 1928 2 Sheets-Sheet 1

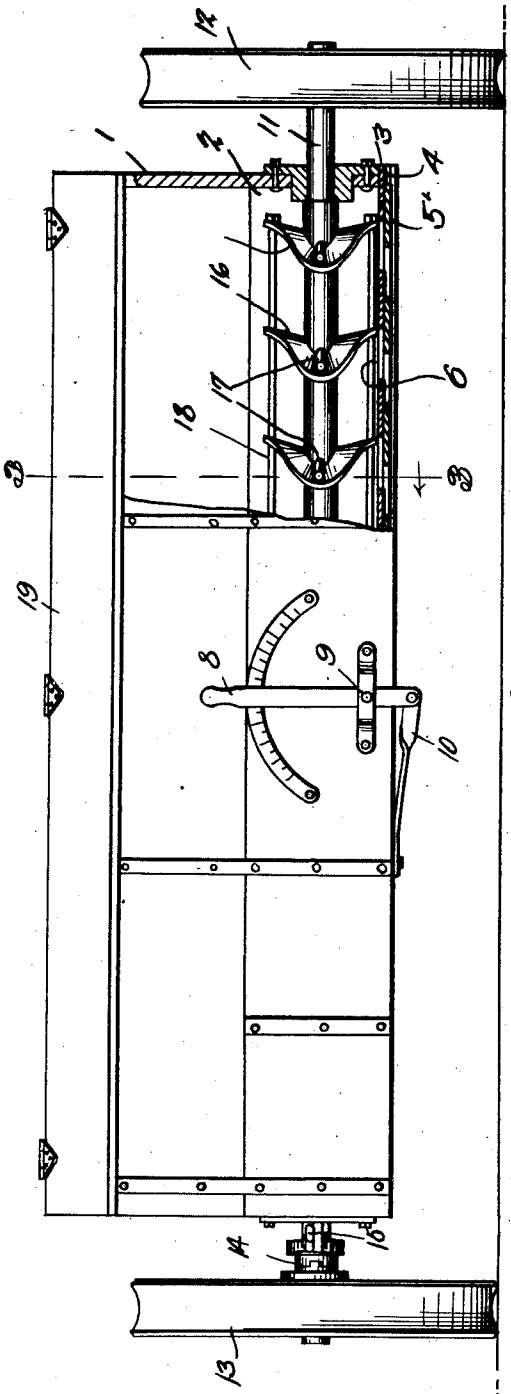


Fig. 1.

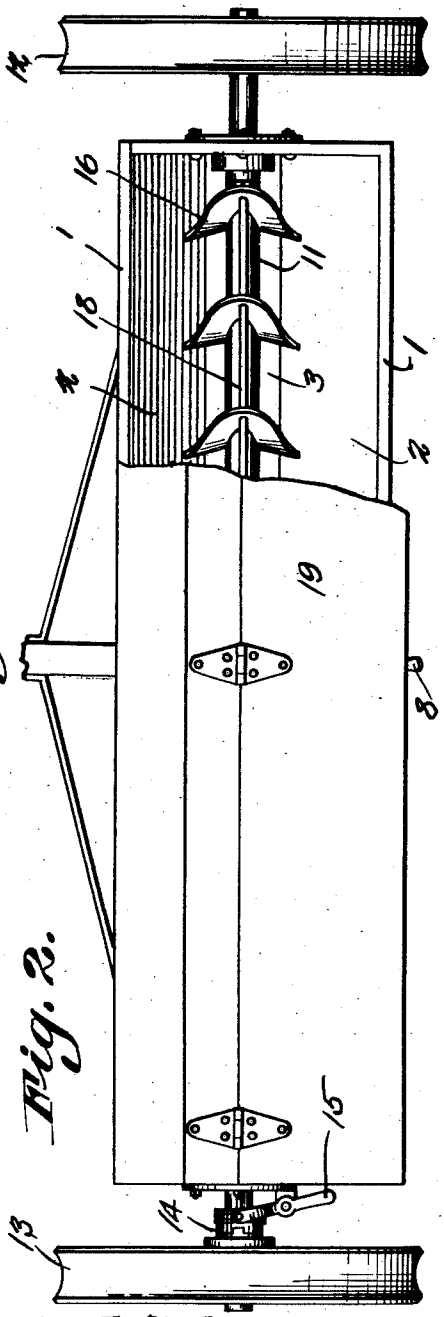


Fig. 2.

A. F. Cotner Inventor

By Crosby & Co.

Attorneys.

Oct. 29, 1929. A. F. COTNER 1,733,722

LIME DISTRIBUTOR

Filed Dec. 20, 1923 2 Sheets-Sheet 2

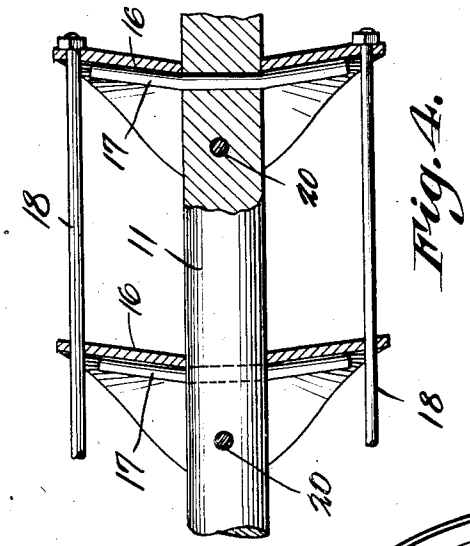


Fig. 4.

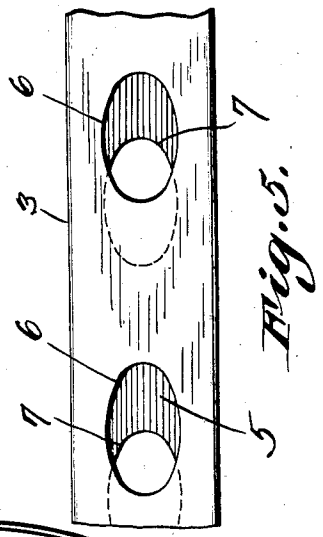


Fig. 5.

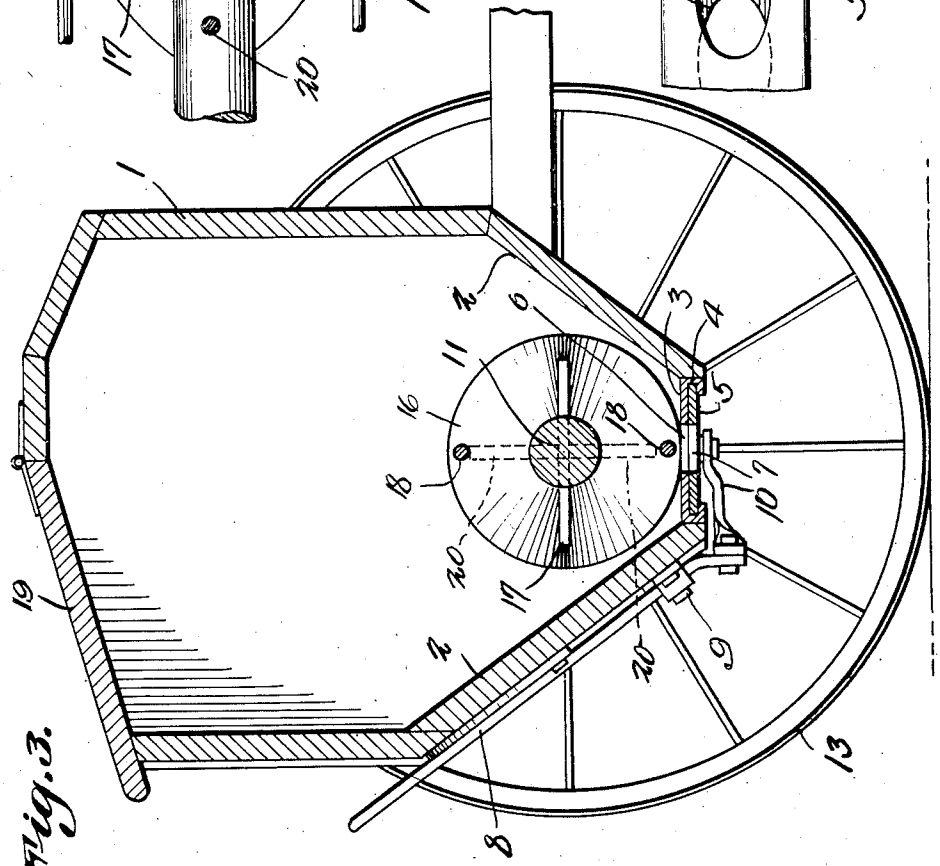


Fig. 3.

A. F. Cotner
Inventor

By C. A. Snow & Co.
Attorneys.

Patented Oct. 29, 1929 1,733,722

UNITED STATES PATENT OFFICE

ALFRED F. COTNER, OF SILER CITY, NORTH CAROLINA

LIME DISTRIBUTOR

Application filed December 20, 1928. Serial No. 327,324.

This invention relates to a lime distributor although it can also be utilized for distributing other materials, such as fertilizer, etc.

It is an object of the invention to provide a simple and compact structure having effective means for reciprocating the bulk material over outlet openings provided therefor so that said material will be kept in a divided state free to flow through the openings without clogging them.

Another object is to provide a novel agitating means having combined therewith a means for maintaining an agitation of bulk material at points remote from the openings.

A further object is to provide a distributor with simple and efficient means for controlling the discharge of material therefrom.

With the foregoing and other objects in view which will appear as the description proceeds the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is a rear elevation of the distributor, a portion thereof being broken away to disclose a part of the agitating means.

Figure 2 is a top plan view showing a portion of the container removed.

Figure 3 is an enlarged vertical section on the line 3—3, Figure 1.

Figure 4 is a longitudinal section through a portion of the agitator, part of the shaft being shown in elevation.

Figure 5 is a top plan view of the means for controlling the flow of material from the distributor.

Referring to the figures by characters of reference, 1 designates a box or container the lower portions of the front and rear walls of which converge downwardly as indicated at 2 thereby to provide a hopper the bottom of which is closed by a plate 3 having longitudinal flanges 4 extending downwardly from the front and back edges thereof. Each of these flanges is bent to provide a guide for a plate 5 slidable between the flanges and held thereby against the under surface of the plate 3. Plate 3 has spaced elliptical openings 6 and similar openings 7 are formed in the slidable plate 5. When plate 5 is in one position the openings 7 register with the openings 6. However, by shifting plate 5, the openings 7 can be moved relative to the openings 6 so that the delivery of material from the container 1 can thus be controlled. As the openings are elliptical, however, the outlet orifices will always present rounded walls so that the danger of material choking the orifices is thus reduced to the minimum.

Any desired means may be employed for shifting plate 5. For example, a lever 8 may be pivotally connected at 9 to the rear portion of the container 1, the lower portion of the lever being connected by a link 10 to the plate 5.

Extending longitudinally through the lower portion of the container 1 is a rotatable axle 11 supported by wheels 12 and 13. Wheel 12 is mounted to rotate freely on the axle 11 while wheel 13 can be coupled to or uncoupled from said axle by a clutch 14 having an actuating lever 15.

Mounted on that portion of the axle within the container are regularly spaced agitating disks 16. Each of these disks is substantially sinusoidal and parallel with the next adjoining disks. Each disk is provided at diametrically opposed points with radial depressions or concavities in one face while midway between these concavities are similar rounded concavities in the opposed face. To insure proper rotation of the disks with the axle and at the same time reinforce them, pins 17 are extended diametrically through the axle and have their terminal portions engaging the disks. The terminals of each pin are seated within opposed concavities in the adjacent disk. Extending through the remaining concavities in all of the disks are tie rods 18 that also constitute agitating elements. These rods extend throughout the length of the series of disks and serve to reinforce the

disks and also to agitate the bulk material in the container 1.

The disks are so proportioned that they will work close to the plate 3, the vertical center of each disk being substantially in line with the center of the opening 6 thereunder.

In practice the container 1 is adapted to be filled or partly filled with the material to be distributed. This container has a hinged cover 19 or the like whereby the material will be protected. As the machine is pulled forwardly over the field the wheels 12 and 13 will rotate freely on the axle 11 until clutch 14 is shifted at which time wheel 13 will cause the axle 11 to rotate. This rotation of the axle will result in rotation of the disks 16 and as these disks rotate within the bulk material they will impart a back and forth lateral movement to the bulk material adjacent thereto, causing it to be thrust back and forth over the several openings 6. At the same time the rods 18 will plow through the bulk material, thereby breaking it up and preventing the formation of lumps. By means of lever 8 the plate 5 can be shifted longitudinally to increase or reduce the size of the outlet orifices and in this way the amount of material delivered can be controlled constantly by the user.

If desired, and as shown in the drawings, additional reinforcing pins 20 can be extended through the axle for engaging in those concavities of the disks through which the tie rods 18 are extended. These pins, however, terminate inwardly from the rods 18 as shown by dotted lines in Figure 3.

What is claimed is:

1. A distributor including a container, a plurality of spaced disks mounted for rotation about a common axis, each of said disks having radial concavities in its opposed faces, reinforcing pins seated within the concavities, and combined tie and agitating rods connecting the disks at points close to their peripheries.

2. A distributor including a container having outlets, an axle mounted for rotation in the container, means for rotating the axle, a plurality of disks mounted on and rotatable with the axle, each of said disks having radial concavities in opposed faces alternately arranged, all of the disks being parallel, and pins extending through the axle and seated in the concavities for holding disks against independent rotation and for reinforcing the disks against lateral thrust.

3. A distributor including a container having outlets, an axle mounted for rotation in the container, means for rotating the axle, a plurality of disks mounted on and rotatable with the axle, each of said disks having radial concavities in opposed faces alternately arranged, all of the disks being parallel, pins extending through the axle and seated in the concavities for holding disks against independent rotation and for reinforcing the disks against lateral thrust, and an agitating rod connecting the disks adjacent their peripheries.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

ALFRED F. COTNER.