

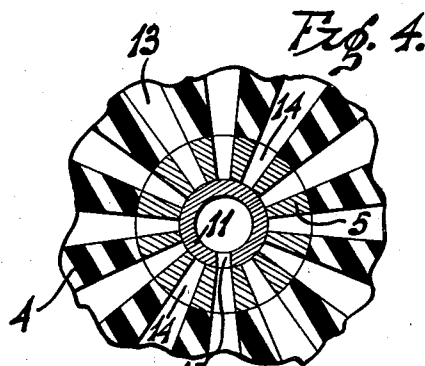
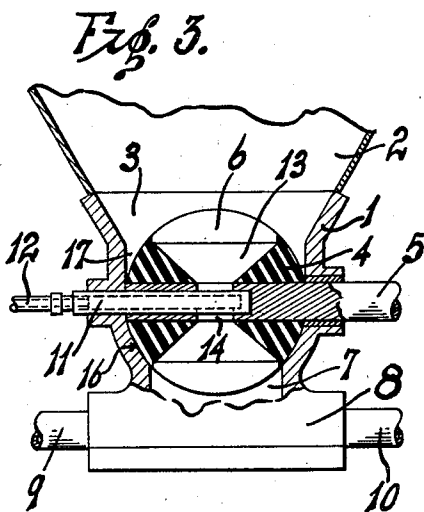
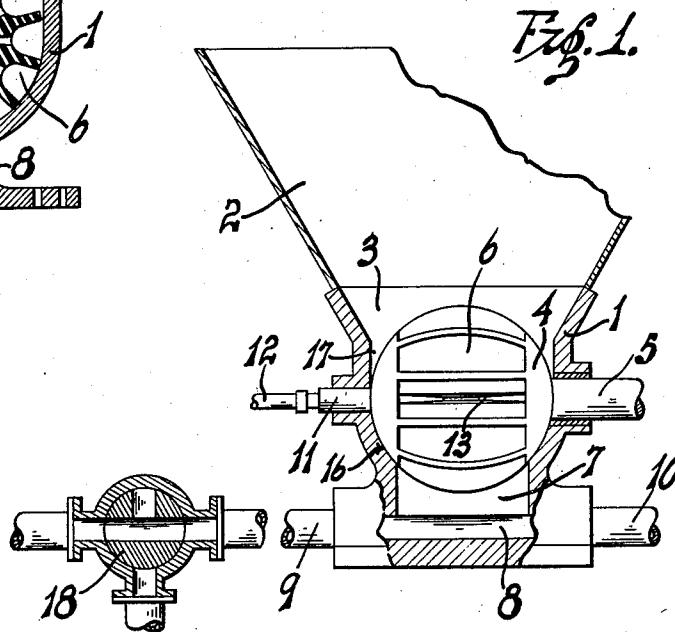
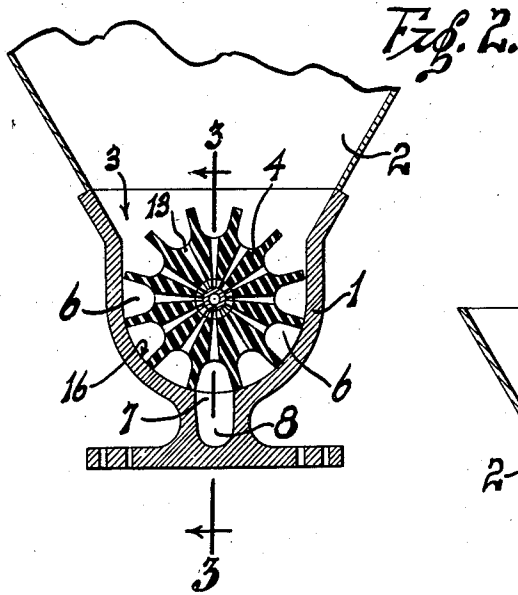
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C. A. DUTRO

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FEED WHEEL

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15 INVENTOR.
CHARLES A. DUTRO.

BY.

H. A. Duckman
ATTORNEY.

UNITED STATES PATENT OFFICE

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FEED WHEEL

Charles Arthur Dutro, Long Beach, Calif.

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2 Claims. (Cl. 302-49)

This invention relates to a feed wheel, whereby materials are continuously fed under pressure to a point of delivery.

My feed wheel is particularly applicable to the feeding or mixing of cementitious or petroleum materials, although other materials may be fed through the wheel, and these materials may be either dry, moist or wet.

An object of my invention is to provide a feed wheel shaped as a figure of revolution, this wheel acting as a valve to prevent the escape of air from the air conduit, and also to carry the material to the air conduit, ready to be fed into said air conduit.

Another object is to provide a novel means of exerting pressure back of each charge of material, so that the material is forcibly carried into the air conduit and thence to the point of delivery.

Still another object is to provide a feed wheel of the character stated, which is simple in construction and which can be readily placed in its housing, or removed therefrom for purposes of repair, when necessary.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a longitudinal, sectional view of my mechanism, showing the feed wheel in elevation.

Figure 2 is a transverse sectional view through the feed wheel and the housing.

Figure 3 is a sectional view taken on line 3-3 of Figure 2.

Figure 4 is an enlarged transverse, sectional view of the hub of the feed wheel.

Referring more particularly to the drawing, my mechanism comprises a housing 1, preferably cast as an integral unit, and provided with a hopper 2, which rises from the housing and has a suitable capacity for the purpose intended. An intake opening 3 is provided in the top of the housing 1, through which the material passes, as will be later described.

A feed wheel 4 is rotatably mounted in the housing 1, and this said wheel is formed as a figure of revolution, preferably a sphere, as shown. A shaft 5 is journaled in the housing 1, and the feed wheel 4 is fixedly attached to this shaft. A suitable source of power not shown continuously rotates the shaft 5 and the wheel 4 in one direction. A plurality of peripheral pockets 6 are formed in the feed wheel, and these pockets preferably extend parallel to the shaft 5. The ma-

terial in the hopper 2 falls into the pockets 6, and is carried downwardly in said pockets to the discharge opening 7. An air conduit 8 is provided in the housing 1 and the discharge opening 7 extends into the air conduit substantially as shown. Air under pressure is fed into the conduit 8 through the pipe 9, and the material is thus forced out into the discharge pipe 10 and thence to the point of delivery. A substantially constant air pressure is maintained in the pipe 9, and it will be evident that material is thus continuously moved into the outlet pipe 10.

In order that the material in the pocket 6 may be forced into the air conduit 8, I provide air pressure back of the material within each of the pockets in the following manner:

A stationary sleeve 11 is fixedly mounted in the housing 1, and extends into a counterbore in the shaft 5. An air hose 12 extends into the outer end of the sleeve 11, and air under equal or higher pressure than is maintained in the pipe 9 is forced into the sleeve. The feed wheel 4 is provided with radial ducts 13, which extend from each of the pockets 6 to the shaft 5. The shaft 5 in turn is provided with ports 14, which are aligned with the ducts 13. A single port 15 is provided in the bottom of the sleeve 11, and this port is in the same plane with the conduit 8. Thus as the wheel 4 rotates to a position where the pocket 6 is immediately above the air conduit, air under pressure will be exerted against the back of the material in the pocket, thus forcing this material downwardly into the air conduit from whence it is carried into the discharge pipe 10, as previously described. Each pocket in turn, as it rotates into position above the conduit 8, will have the material therein ejected in the manner described.

The lower portion 16 of the housing is curved to conform with the periphery of the feed wheel 4, and thus the feed wheel seating against this curved surface acts as a valve to prevent the escape of air upwardly from the air conduit 8. The upper portion 17 of the housing is approximately the same diameter as the feed wheel 4, so that the wheel can be pulled upwardly to remove the same from the housing, after the shaft 5 and the sleeve 11 have been removed.

The method of attaching the feed wheel to the shaft 5 is usual and well-known and forms no part of this invention.

The feed wheel 4 is preferably made of rubber although any other yieldable or fibrous or metallic material may be used.

The control valve 18 in the intake pipe 9 is usual for structures of this character.

Having described my invention, I claim:

1. A feed mechanism comprising a housing formed as an integral casing, a feed wheel rotatably mounted in said housing, said feed wheel being spherical shape and formed of a yieldable material, said housing having a material intake therein, said intake being substantially the same diameter as the diameter of the feed wheel, an air conduit below said wheel through which air under pressure is forced, an outlet in the housing extending to said air conduit, the lower portion of said housing being substantially hemi-spherical in shape to provide a seat against which the spherical wheel rests, said feed wheel having peripheral pockets therein whereby material is conveyed from the intake to the air conduit, a shaft journaled in the housing, said feed wheel being non-rotatably mounted on the shaft, said feed wheel having ducts extending from each of the pockets into the shaft, a sleeve extending into the shaft and closely fitting the same, an air hose attached to the sleeve, said sleeve having a downwardly opening port therein whereby air under pressure is directed into each of the pockets as the pocket registers with the outlet in the housing.

2. A feed mechanism comprising a housing

formed as an integral casing, a feed wheel rotatably mounted in said housing, said feed wheel being spherical shape and formed of a yieldable material, said housing having a material intake therein, said intake being substantially the same diameter as the diameter of the feed wheel, an air conduit below said wheel through which air under pressure is forced, an outlet in the housing extending to said air conduit, the lower portion of said housing being substantially hemi-spherical in shape to provide a seat against which the spherical wheel rests, said feed wheel having peripheral pockets therein whereby material is conveyed from the intake to the air conduit, a shaft journaled in the housing, said feed wheel being non-rotatably mounted on the shaft, said feed wheel having ducts extending from each of the pockets into the shaft, a sleeve extending into the shaft and closely fitting the same, an air hose attached to the sleeve, said sleeve having a downwardly opening port therein whereby air under pressure is directed into each of the pockets as the pocket registers with the outlet in the housing, said shaft being journaled in one side of the housing and projecting through the feed wheel to the opposite face of said feed wheel, said sleeve being mounted in the housing, and journaled the shaft opposite its journal in the housing.

CHARLES ARTHUR DUTRO.