No. 756,327. PATENTED APR. 5, 1904.

W. CARKEEK.

APPARATUS FOR DISTRIBUTING ORE PULP TO CONCENTRATING TABLES.

APPLICATION FILED OCT. 9, 1901.

NO MODEL.

Fig. 2.

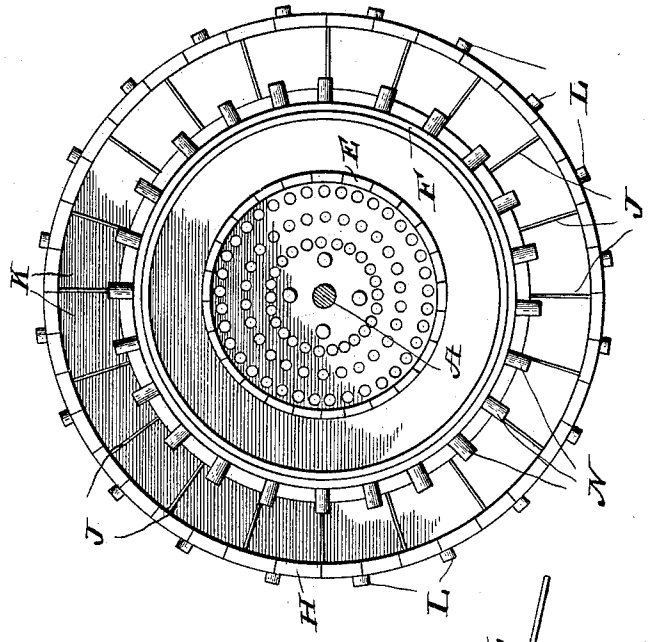
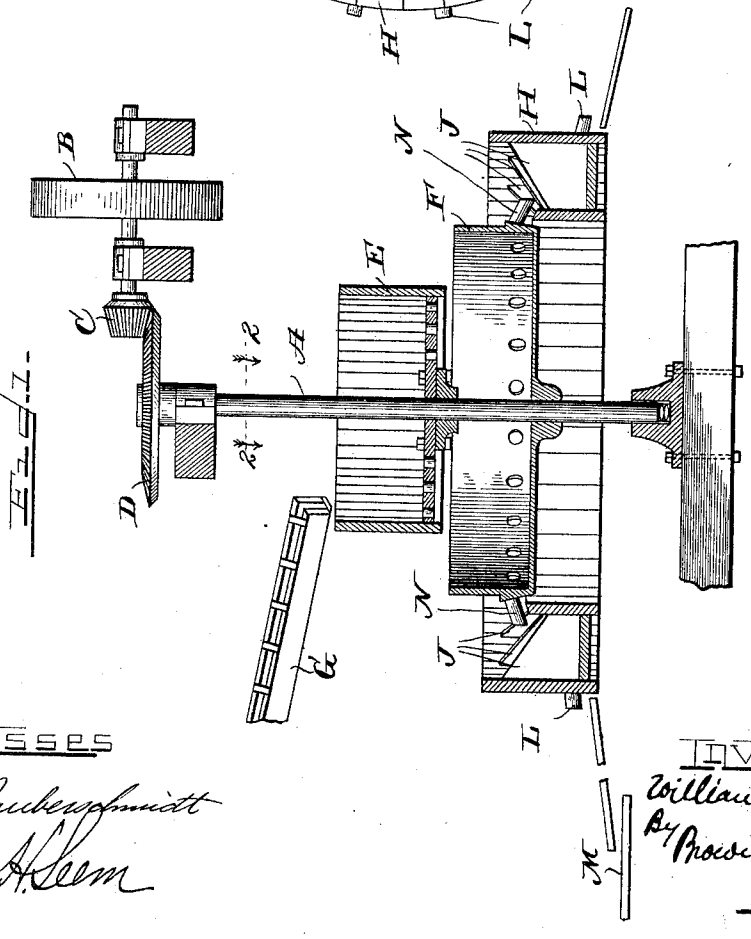


Fig. 1.



Witnesses

G. A. Pauberschmidt

Chas. H. Seem

Inventor

William Carkeek

By Brosius & Darby

Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 756,327. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM CARKEEK, OF BUTTE, MONTANA.

APPARATUS FOR DISTRIBUTING ORE-PULP TO CONCENTRATING-TABLES.

SPECIFICATION forming part of Letters Patent No. 756,327, dated April 5, 1904.

Application filed October 9, 1901. Serial No. 78,086. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CARKEEK, a citizen of the United States, residing at Butte, in the county of Silverbow and State of Montana, have invented a new and useful Apparatus for Distributing Ore-Pulp to Concentrating-Tables, of which the following is a specification.

This invention relates to apparatus for distributing ore-pulp and water to concentrating-tables.

The object of the invention is to provide means for equalizing the distribution of the ore-pulp and water to be supplied to a plurality of concentrating-tables.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings, and to the various views and reference-signs appearing thereon, Figure 1 is a view in vertical central section through an equalizing and distributing apparatus embodying the principles of my invention. Fig. 2 is a top plan view of the same, the operating-shaft being in transverse section on the line 2 2, Fig. 1.

The same part is designated by the same reference-sign wherever it occurs throughout both views.

In the operation of ore-concentrating mills it is usual to employ concentrating tables or machines in sufficient number to properly take care of the pulp to be handled in the plant. In the practical, successful, and economical operation of the concentrating tables or machines it is exceedingly desirable to equalize the amount of ore-pulp and water supplied to the several tables employed for handling the output of the plant to the end that the same amount of pulp and water may be supplied to each table. It is also exceedingly desirable to provide means whereby the supply of material to each table is rendered constant and uniform.

It is the special purpose of the present invention to provide means for equalizing the distribution of the ore-pulp and water, so that each concentrating table or machine will receive for each unit of time and simultaneously exactly the same amount of pulp and water and under uniform conditions of feed.

In the accompanying drawings I have shown my invention as applied to an apparatus adapted for equally distributing the ore-pulp and water to twenty tables; but it is obvious that the invention is not limited to this exact number, as the number of tables to be supplied may be increased or decreased, as may be desired, without departure from the spirit and scope of my invention.

Referring to the accompanying drawings, reference-sign A designates a shaft suitably journaled and adapted to receive rotation from any suitable or convenient source of power—as, for instance, through pulley B and the intermeshing gears or pinions C D, respectively, mounted upon the shaft of said pulley B and said shaft A. Mounted upon shaft A to revolve therewith is the mixer-box E and the distributer F.

G designates the feed-box or launder by which ore-pulp and water are delivered to the mixer E.

H designates the equalizer, which is divided by radial partitions into compartments of equal area and corresponding in number to the number of tables or concentrating-machines to be supplied therefrom, J designating the partitions, and K compartments formed in the equalizer by the partitions J. Each compartment K of the equalizer is provided with a jet L, arranged to deliver to a concentrating table or machine, (indicated generally and roughly by reference-sign M, Fig. 1.) In the particular form shown, to which, however, the invention is not limited, as above indicated, the equalizer is divided into twenty compartments—that is to say, the apparatus shown is designed to supply twenty concentrating tables or machines—though it is obvious by increasing or decreasing the number of compartments K of the equalizer the number of tables to be supplied may be regulated as desired. The equalizer H is arranged in convenient relation with respect to the revolving distributer F for said distributer to deliver the pulp and water into the various compart-

ments of equalizer H during the revolutions of said distributer, the distributer being provided with suitable jets N, each of which during a complete revolution of the distributer supplies or delivers an equal amount of the pulp and water to each of the compartments K of the equalizer. The distributer F may be provided with any desired number of delivery-jets N. In the particular form shown, to which, however, the invention is not limited, the distributer F is provided with twenty-four jets N. Suppose now the distributer makes ten revolutions per minute and is provided with twenty-four distributing-jets N. It will be readily seen that each compartment K, exactly the same amount of pulp and water from the two hundred and forty jets each minute—that is to say, two hundred and forty jets will deliver each minute the same amount of pulp and water into each compartment—thus securing an absolutely mathematical equalization of the distribution of the ore-pulp and water to the concentrating-tables, thereby enabling the concentrating tables or machines to operate under absolutely uniform conditions of feed or supply of the pulp thereto.

In the operation of the apparatus the ore-pulp and water are supplied in the usual manner to the mixer E and thence through the perforated bottom thereof or otherwise to the distributer F, and from the distributer F the pulp and water are supplied in equal amounts to the various compartments K of the equalizer H through the jets N, each compartment K of the equalizer delivering to a concentrating table or machine. Thus in a most simple and efficient manner I secure an equal distribution of the ore-pulp and water to the concentrating-machines.

It is obvious that changes and variations in the details of construction and arrangement would readily occur to persons skilled in the art, and variations in the number of compartments of the equalizer and of the jets delivering thereto from the distributer may be made in order to accommodate the apparatus to any desired number of concentrating tables or machines.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus of the class described, a supply-pipe, a rotary mixer-box having perforations in its bottom, a distributer-chamber having a plurality of openings equally spaced around its periphery, a series of tubes projecting diagonally downward from said openings with respect to the plane of rotation, a series of boxes having partitions diagonally disposed with respect to said plane and interposed in the direction of said tubes, the edges of said partitions being substantially perpendicular to said tubes, and outlet-pipes for said receptacles.

2. In an apparatus of the class described, a supply-pipe, a rotary mixer-box having perforations in its bottom, a rotary distributer-box arranged below and having a larger diameter than the mixer-box, and having a plurality of discharge-pipes, extending diagonally outward with respect to the plane of rotation, and an annular chamber arranged below and having a larger diameter than said distributer-box, and having a plurality of comparatively thin radial partitions, the upper edges of said partitions extending in a diagonal direction with respect to said plane of rotation and substantially at right angles to the pipes from the distributer-box, and a plurality of pipes extending from said annular chambers, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 3d day of October, 1901, in the presence of the subscribing witnesses.

WILLIAM CARKEEK.

Witnesses:
T. V. DOHERTY,
F. H. PILLING.