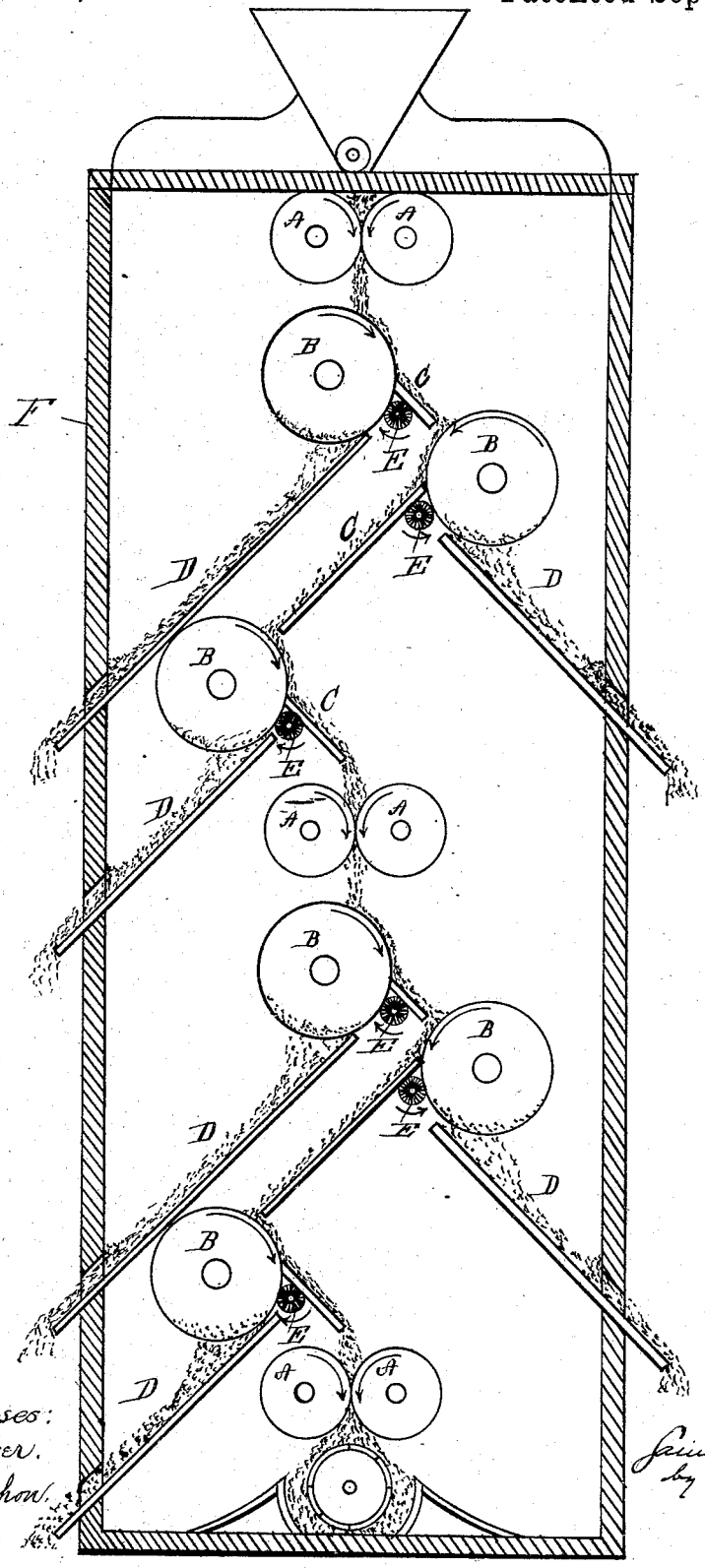
(No Model.)

S. L. BEAN.

ROLLER GRINDING MILL.

No. 265,002. Patented Sept. 26, 1882.



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UNITED STATES PATENT OFFICE.

SAMUEL L. BEAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

ROLLER GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 265,002, dated September 26, 1882.

Application filed March 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL L. BEAN, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Roller Grinding-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention is designed to be an improvement upon a roller grinding-mill described in my application for United States Letters Patent filed July 13, 1881; and it consists principally of the combination of cant-boards with rotating screening-cylinders, such cant-boards extending from one end to the other thereof, so as to catch all the fine flour and middlings which may be sifted through such screening-cylinder and discharge the same through openings in the sides of the chest or into any receptacle within the chest, as may be deemed most expedient under the circumstances.

In order that my invention may be clearly understood, I have illustrated in the annexed drawing, and will proceed to describe, the best form thereof at present known to me.

The drawing shows a roller grinding-mill with three tiers of grinding-rollers, A A, between each set of which and the next set below are arranged three screening-cylinders, B. The uppermost screening-cylinder of each set of three is placed just below the grinding-rollers above it, and in such relation thereto that the chop from the grinding-roller will fall upon such screening-cylinder on a line at some little distance from the vertical plane of the axis of said cylinder, so that the tendency of the chop will be to slide down that side of the screening-cylinder adjacent to the next screening-cylinder below. From the upper screening-cylinder of each set, which will sift out a portion of the fine flour and middlings, the remaining chop is received upon a cant-board, C, by which it is directed to fall upon the adjacent side of the next screening-cylinder, from which, after sliding over it for some distance and being further screened, the chop falls again upon a cant-board, C, which directs it to fall upon the adjacent side of the third screening-cylinder, over which it again slides some distance, and is then received upon a third cant-board, C, which delivers it upon the next pair of grinding-rollers for further reduction. The chop is thus subjected to three separate screens in its passage from one set of grinding-rollers to the next set. Under each cant-board C, and close to the screening-cylinder which delivers the chop upon said cant-board, is arranged a brush, E, preferably a rotating brush rotated in the direction indicated by the arrow, for the twofold purpose of cutting off the escape of chop along that line and of brushing the screening-cylinder to clean its meshes. Under each screening-cylinder is arranged a second cant-board, D, at about right angles to the cant-board C, for the purpose of catching all the fine flour and middlings that may fall through the screening-cylinders, and of delivering such fine flour and middlings to any desired receptacle, either within or without the chest F. In the example illustrated I have shown this cant-board D as delivering the fine flour and middlings through openings in the sides of the chest. All the cant-boards C and D extend the whole length of the screening-cylinders, and must be placed at the proper angle for discharging the material delivered upon them—say about forty-five degrees.

Instead of rotary brushes E, stationary brushes may be used, in which case such brushes may be fastened to the under side of the cant-boards C, so as to bear with some force against the adjacent screening-cylinder, thus forming both a cut-off for the chop and a brush for cleaning the cylinder. The screening-cylinders may be so arranged with respect to each other that the cant-boards C can be dispensed with, the lowermost screening-clyinder between each set of rollers being so located that the chop will fall from it either directly or over a cant-board into the bite of the rollers beneath.

If desired, the screening-cylinders may be constructed with automatic knockers for the purpose of periodically knocking said cylinders to aid in the discharge therefrom of the fine flour and middlings. I prefer to use several screening-cylinders between each set of

grinding-rollers; but that is not absolutely essential, as by the use of a single screening-cylinder between each set of grinding-rollers very good results may be obtained. The screening-cylinders or rotating cylindrical screens are preferably rotated in the direction indicated by the arrows applied to them. For rotating them belt-gearing may be used.

Having thus described my invention, what I claim is—

1. The combination, substantially as before set forth, of a pair of grinding-rollers, a rotating cylindrical screen, onto the exterior surface of which the chop from the rollers falls, and a cant-board under said cylindrical screen for catching and delivering the fine flour and middlings sifted from the chop by the screen.

2. The combination, substantially as before set forth, of a pair of grinding-rollers, a series of rotating cylindrical screens arranged stepwise, a cant-board for directing the chop from one screen onto the next screen, a brush under each such cant-board, and a second cant-board under each screen for catching and delivering the fine flour and middlings sifted from the chop by the screen.

In testimony whereof I affix my signature in presence of two witnesses.

SAML. L. BEAN.

Witnesses:
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