No. 844,623.

PATENTED FEB. 19, 1907.

W. C. SHINER.

ROTARY KILN.

APPLICATION FILED OCT. 26, 1906.

2 SHEETS—SHEET 1.

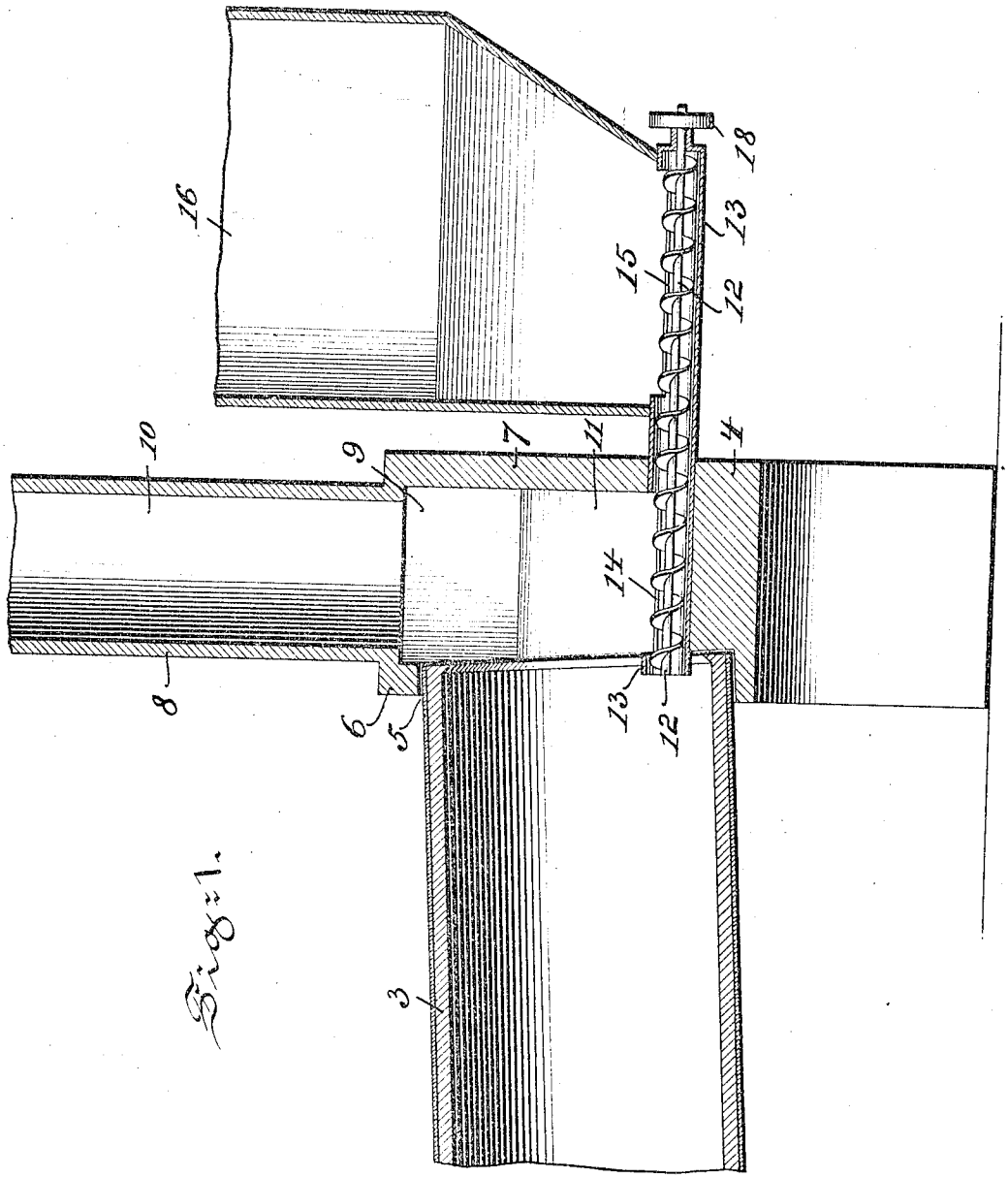


Fig. 1.

WITNESSES:

Wilhelm Vogt

Thomas M. Smith

INVENTOR

William C. Shiner

BY

J. Walter Douglas

ATTORNEY.

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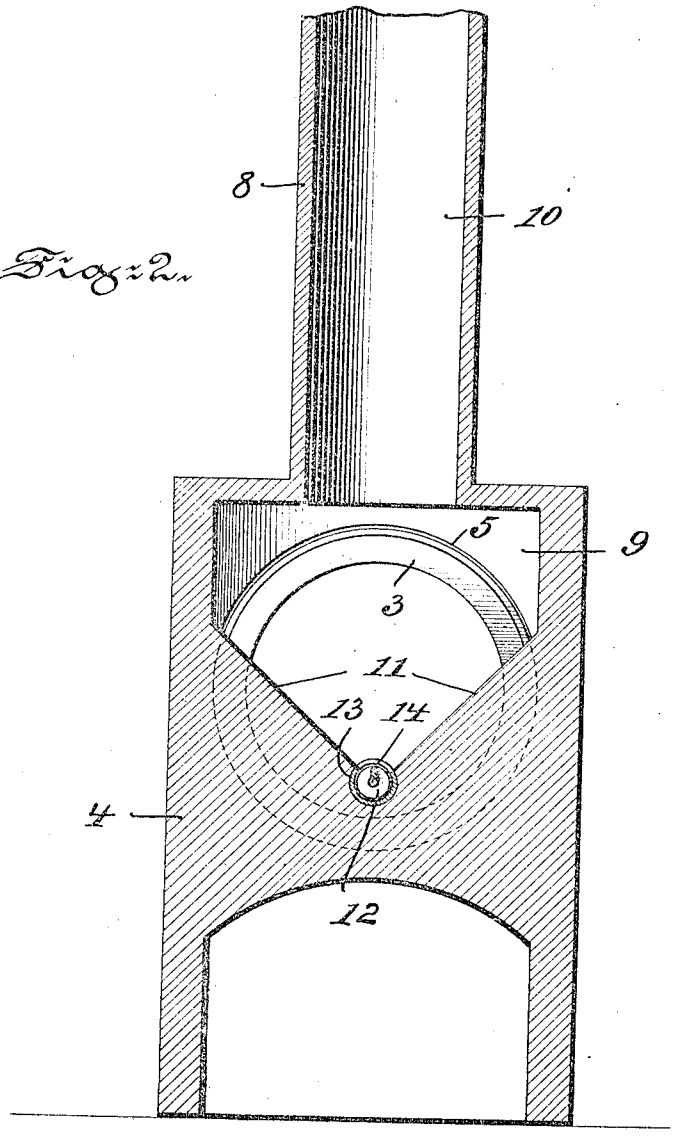
W. C. SHINER.

ROTARY KILN.

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2 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:

Wilhelm Vogt

Thomas M. Smith

INVENTOR

William C. Shiner,

BY

J. Walter Douglass.

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM CYRUS SHINER, OF CATASAUQUA, PENNSYLVANIA, ASSIGNOR TO JAMES W. FULLER, JR., OF CATASAUQUA, PENNSYLVANIA.

ROTARY KILN.

No. 844,623. Specification of Letters Patent. Patented Feb. 19, 1907.

Application filed October 26, 1906. Serial No. 340,630.

To all whom it may concern:

Be it known that I, WILLIAM CYRUS SHINER, a citizen of the United States, residing at Catasauqua, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Rotary Kilns, of which the following is a specification.

My invention has relation to rotary kilns; and in such connection it relates more particularly to the construction and arrangement of such a kiln.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a view illustrating in vertical central section one portion of a rotary kiln, a stack having a base, a chamber arranged below the stack in the base and communicating with the kiln, a conveyer arranged in the base communicating with the chamber and terminating in the kiln, and a bin connected by the conveyer with the kiln, all embodying main features of my said invention; and Fig. 2 is a similar view of the stack at a right angle to Fig. 1.

Referring to the drawings, 3 is a rotary kiln-tube, which is supported in an inclined position and adapted to be rotated by means not shown. In order to connect the kiln-tube 3 directly with a stack, the same terminates in an opening 5, arranged in the front wall 6 of the base 4 thereof, in which the kiln freely rotates. In addition to receiving the end of the kiln-tube 3 the base 4 is provided with a chamber 9, arranged directly below the flue 10 of the shaft 8 of the stack, and which communicates with the kiln-tube 3. The lower portion of the chamber 9, at the sides parallel to the kiln-tube 3, is formed with downwardly-inclined walls 11, which terminate in a conveyer 12, located in the base 4 and preferably arranged in the vertical central axis of the base 4, shaft 8, and kiln-tube 3 for a purpose to be presently more fully explained. The casing 13 of the conveyer 12 is provided within the chamber 9 with an oblong opening 14, which is arranged in alinement with the inclined walls 11 thereof. The conveyer 12 passes through the wall 7 of the base 4 and beyond the same is connected with a bin 16, which communicates therewith by an opening 15, arranged in the casing 13.

The bin 16 serves as a storage-receptacle for raw material to be treated in the kiln-tube 3—consisting, for instance, of lime, cement, rock, &c.—which by means of the conveyer 12, when rotated by a pulley 18, is conducted through the base 4 of the shaft 8 directly into the kiln-tube 3. The kiln by being rotated and held in an inclined position will conduct the raw material fed into the same toward the lower end, (not shown,) from which it is discharged. During the travel of the material through the kiln-tube 3 the same is subjected to an intense heat generated and conducted through the kiln-tube 3 by means not shown. The gases of combustion of the fuel and those arising from material, as well as the dust or fine particles of such in the kiln due to continuous elevation and descent caused by the rotation thereof, are withdrawn therefrom by the draft induced by the shaft 8 through the chamber 9 into the flue 10 thereof. The dust or fine particles thus removed from the kiln-tube 3, with the gases, are drawn into the flue of the shaft 8, accumulating on the walls thereof, from which they finally drop by gravity back into the chamber 9. The inclined walls 11 thereof aid in conducting the dust or fine particles into the conveyer 12, which return the same back into the kiln-tube 3. The conveyer 12 by being connected with the storage-bin 16 will also conduct the raw material into the kiln-tube 3, thereby serving a double purpose.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a rotary kiln, a stack provided with a base having a chamber adapted to receive and to retain matter dropped from the stack, a kiln-tube connected with the base and terminating with its interior portion slightly below the chamber thereof, and movable means for positively conducting the descending matter from the stack-flue directly into said kiln.

2. In a rotary kiln, a kiln-tube, a stack having a base provided with a chamber, the walls whereof parallel to said kiln are downwardly inclined and terminate in a horizontally-arranged meeting portion, a casing located in said base having an opening arranged in alinement with the inclined walls

of the chamber and terminating in said kiln-tube, the inclined walls of said chamber adapted to conduct matter dropping from the stack directly into said casing, and said conveyer adapted to conduct the matter directly into said kiln-tube.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

WILLIAM CYRUS SHINER.

Witnesses:
GEORGE KOPP,
R. L. WEAVER.