Nov. 15, 1927.

G. McCRAE

1,649,609

CYLINDRICAL KILN

Original Filed April 27, 1920

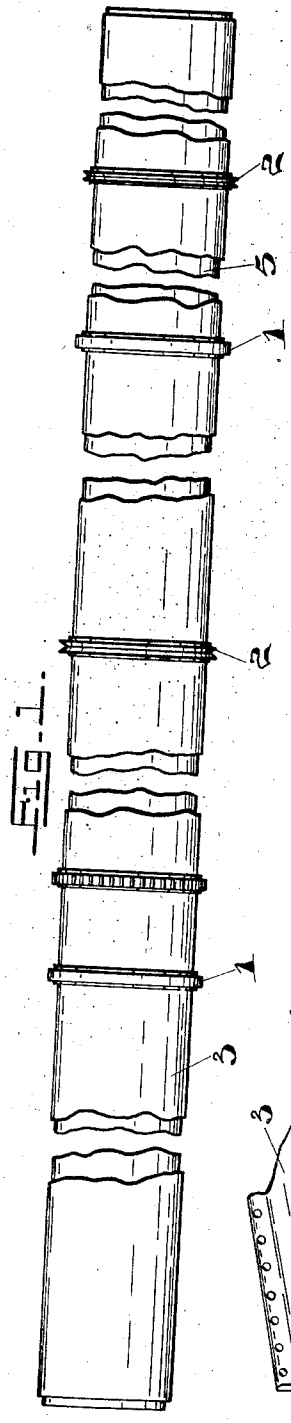


Fig. 1.

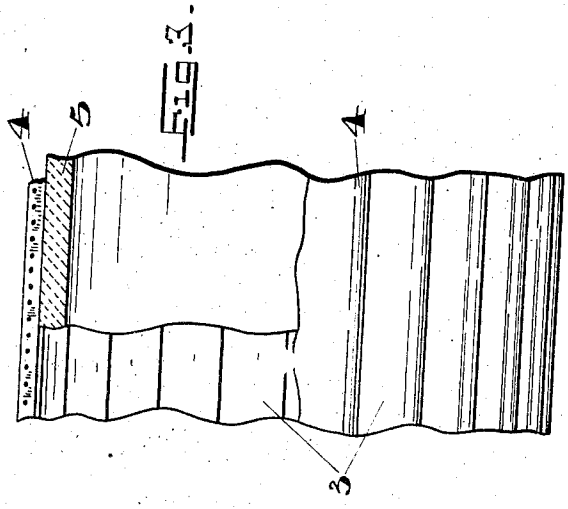


Fig. 3.

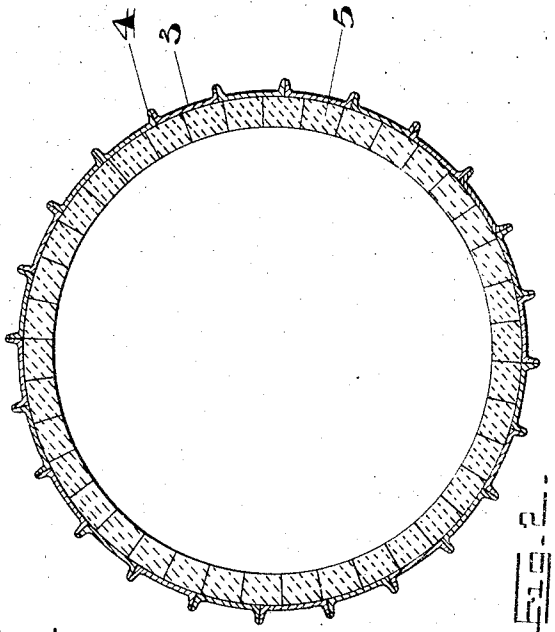


Fig. 2.

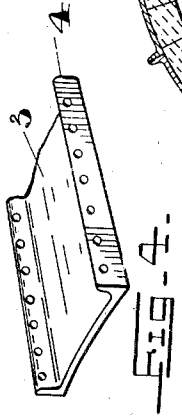


Fig. 4.

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ATTY.

Patented Nov. 15, 1927.

1,649,609

UNITED STATES PATENT OFFICE.

GEORGE McCRAE, OF BRANTFORD, ONTARIO, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO FULLER LEHIGH COMPANY, A CORPORATION OF DELAWARE.

CYLINDRICAL KILN.

Application filed April 27, 1920, Serial No. 377,075. Renewed July 7, 1922. Serial No. 573,454.

This invention relates to cylindrical kilns, usually rotary, in which solid materials are subjected to the action of heat. Ordinarily the shells of such kilns are formed of lapped and riveted plates, and my object is to devise a construction of shell which will be stiffer, stronger and lighter than the older form of shell, and which will possess a flush inside surface.

I attain my object by forming the shell of a plurality of longitudinal sections, each section having an outwardly extending radial flange formed along each straight edge abutting a similar flange on the adjacent section, the adjacent flanges being secured together preferably by rivets or bolts.

I attain my object by means of the constructions hereinafter described and illustrated in the accompanying drawings in which—

Fig. 1 is a side elevation, partly broken away, of a cylindrical kiln;

Fig. 2 a cross section on an enlarged scale through part of the kiln;

Fig. 3 a side elevation, partly in section, of part of the kiln on the same scale as Fig. 2; and

Fig. 4 a perspective detail of part of one of the sections of the kiln.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

The kiln, as will be seen from Fig. 1 of the drawings, is in general of ordinary type, and is shown as adapted for rotation, 1 being the circular tracks commonly employed and 2 the sheaves or pulleys whereby power may be applied to rotate the kiln. Of course, any ordinary gearing may be employed for this purpose. As indicated particularly in Figs. 2, 3 and 4 of the drawings, the kiln, instead of being made of lapped and riveted plates, is formed of a plurality of longitudinal sections 3, each section being provided along each of its straight edges with a radial flange 4, these flanges extending outwardly a sufficient distance to provide suitable space for the bolts or rivets by which they are secured together.

To the interior of the shell the refractory lining 5 will be secured in any ordinary manner.

From the above description it will be seen that the inside of the shell of the kiln is flush, being without projections of any kind. It will also be seen that the longitudinal ribs formed by the flanges 4 provide longitudinal stiffness for the shell, so that the shell as a whole may be made of lighter material without in any way sacrificing strength.

What I claim as my invention is:—

A cylindrical kiln comprising a self-supporting metal shell having a smooth inner surface, this shell consisting of a plurality of similar channel sections each of which has an arcuate web with longitudinally extending flanges serving to stiffen the web, these sections being assembled edge-to-edge with their flanges in contact and bolted together, the sections being laid end-to-end throughout the length of the kiln in longitudinal alignment with their ends contacting but otherwise independent of each other, and a refractory lining inside the kiln covering the inner faces of the sections.

Signed at Brantford, Ontario, Canada, this 9th day of April, 1920.

GEORGE McCRAE.