No. 813,490. PATENTED FEB. 27, 1906.

T. A. EDISON.

CEMENT KILN.

APPLICATION FILED NOV. 2, 1904.

Fig. 1.

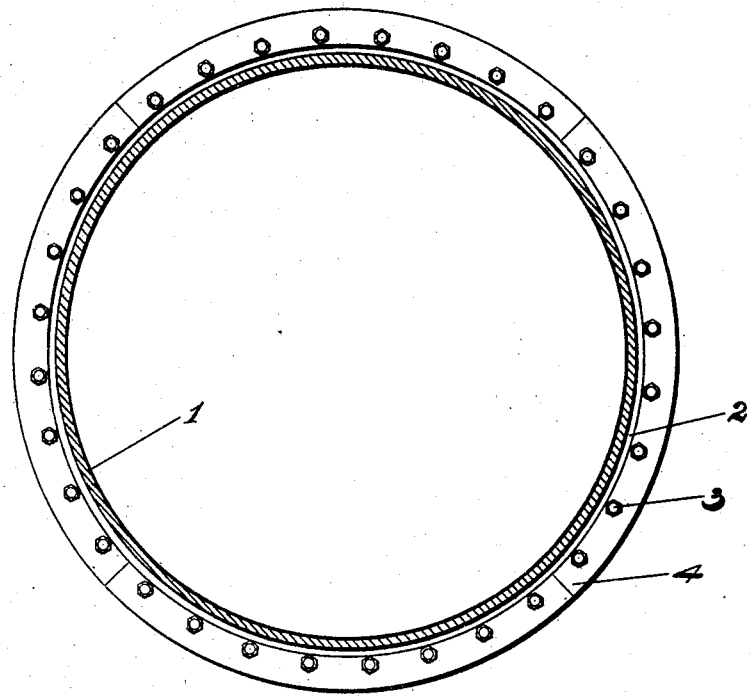


Fig. 2.

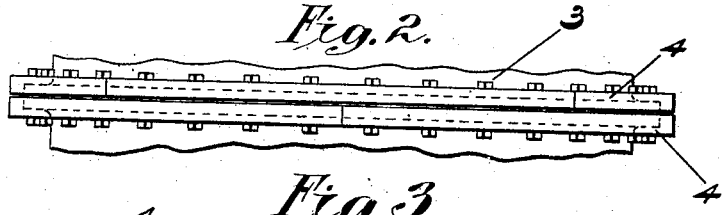
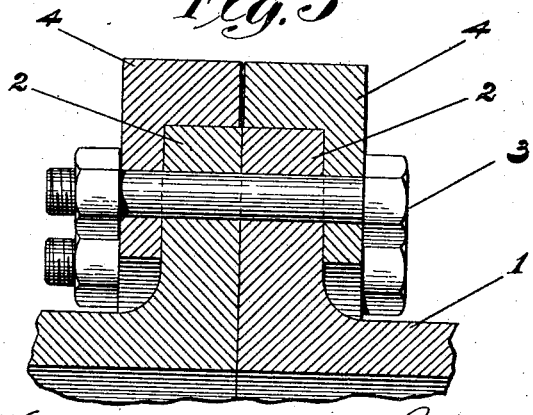


Fig. 3



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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

CEMENT-KILN.

No. 813,490. Specification of Letters Patent. Patented Feb. 27, 1906.

Application filed November 2, 1904. Serial No. 231,065.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, a citizen of the United States, residing at Llewellyn Park, Orange, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Cement-Kilns, of which the following is a specification.

In my improved cement-kiln the latter, owing to its great length and diameter, is made of cast-iron sections in order that there may be no objectionable warping under the effect of the intense heat used, as would be the case if wrought-iron were used. These sections are made with flanges at their ends, and the flanges are bolted together. The kiln is supported on rollers engaging said flanges. Obviously the weight of such a kiln is enormous, and I find in practice that for this reason the edges of the flanges begin to disintegrate, and when this action commences the entire wearing-surface of the flange becomes cracked or broken off.

The object of my invention is to provide a construction in which this objection will be overcome; and to this end the invention consists in making a kiln of cast-iron sections, the flanges being protected by steel shoes which form wearing-surfaces for engaging the supporting-rollers. These steel shoes are of greater surface than the flanges, and being made of much tougher material there can be no danger of their becoming cracked, broken, or disintegrated. At the same time they effectively protect the flanges from disrupting strains by distributing the pressure over an increased area. The shoes being made sectional can, if worn off, be removed and readily replaced by fresh sections when necessary.

In order that the invention may be better understood, attention is directed to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a cross-sectional view through one of my improved kilns, the interior lining being removed and showing the protecting-shoes in position; Fig. 2, a plan view of the same, and Fig. 3 an enlarged cross-sectional view through the flange.

In the views corresponding parts are represented by the same numerals of reference.

The shell 1 is made of cast-iron sections of suitable length formed with flanges 2 2, which abut and which are fastened together by bolts 3 3. Secured over the flanges 2 2 are steel wearing-shoes 4 4, held in place by the bolts 3. These shoes are made sectional, as shown, and preferably the sections break joints, as illustrated in Fig. 2, in order that the weight of the kiln may not at any time rest entirely on one of the joints. In that case there would be danger of the shoes yielding elastically and imposing objectionably heavy strains on the cast-iron flanges. By arranging the protecting-shoes as explained the strains are quite widely distributed over the cast-iron flanges, so that any danger of the latter being cracked or broken will be entirely removed. Furthermore, since the sectional shoes are in contact with the flanges any shearing strains are removed from the bolts, and since the shoes are carried entirely outside of the kiln they may be readily removed and replaced without interfering in any way with the interior lining thereof.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe covering said flanges and comprising a bearing-surface and a securing-flange at right angles thereto, substantially as set forth.

2. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe composed of two sets of L-shaped sections placed opposite each other and secured to said flanges, substantially as set forth.

3. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe composed of two sets of sections each of which has a bearing-surface and a securing-flange, the sections of one set being so placed that their bearing-surfaces break joints with those of the other set, substantially as set forth.

4. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe composed of two sets of L-shaped sections placed opposite each other and breaking joints, substantially as set forth.

5. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a bearing comprising two sets of sections secured to said flanges and forming rings, the sections of one ring breaking joints with the sections of the other ring, substantially as set forth.

This specification signed and witnessed this 29th day of October, 1904.

THOS. A. EDISON.

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