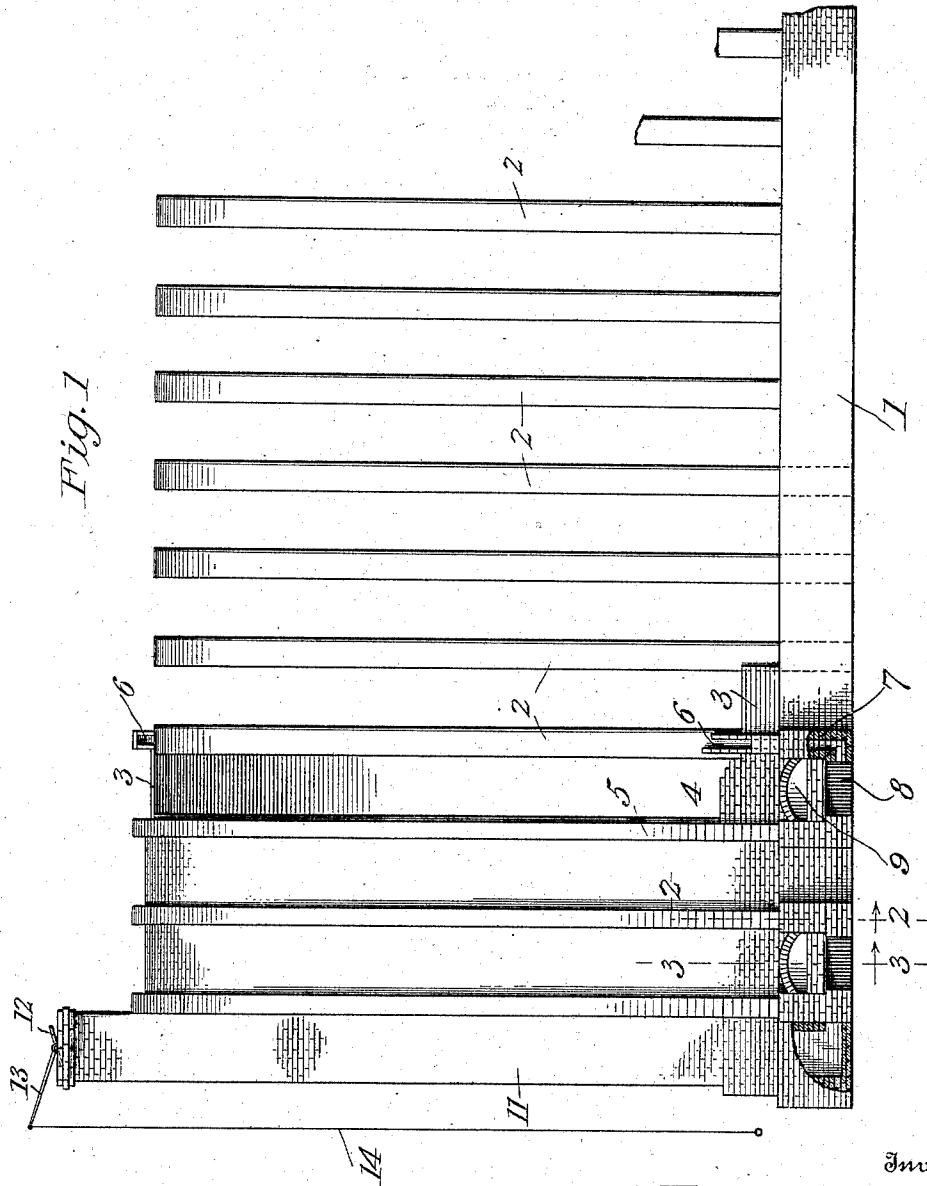


E. H. BRADLEY.
BRICK KILN.
APPLICATION FILED DEC. 14, 1909.

966,991.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



Witnesses

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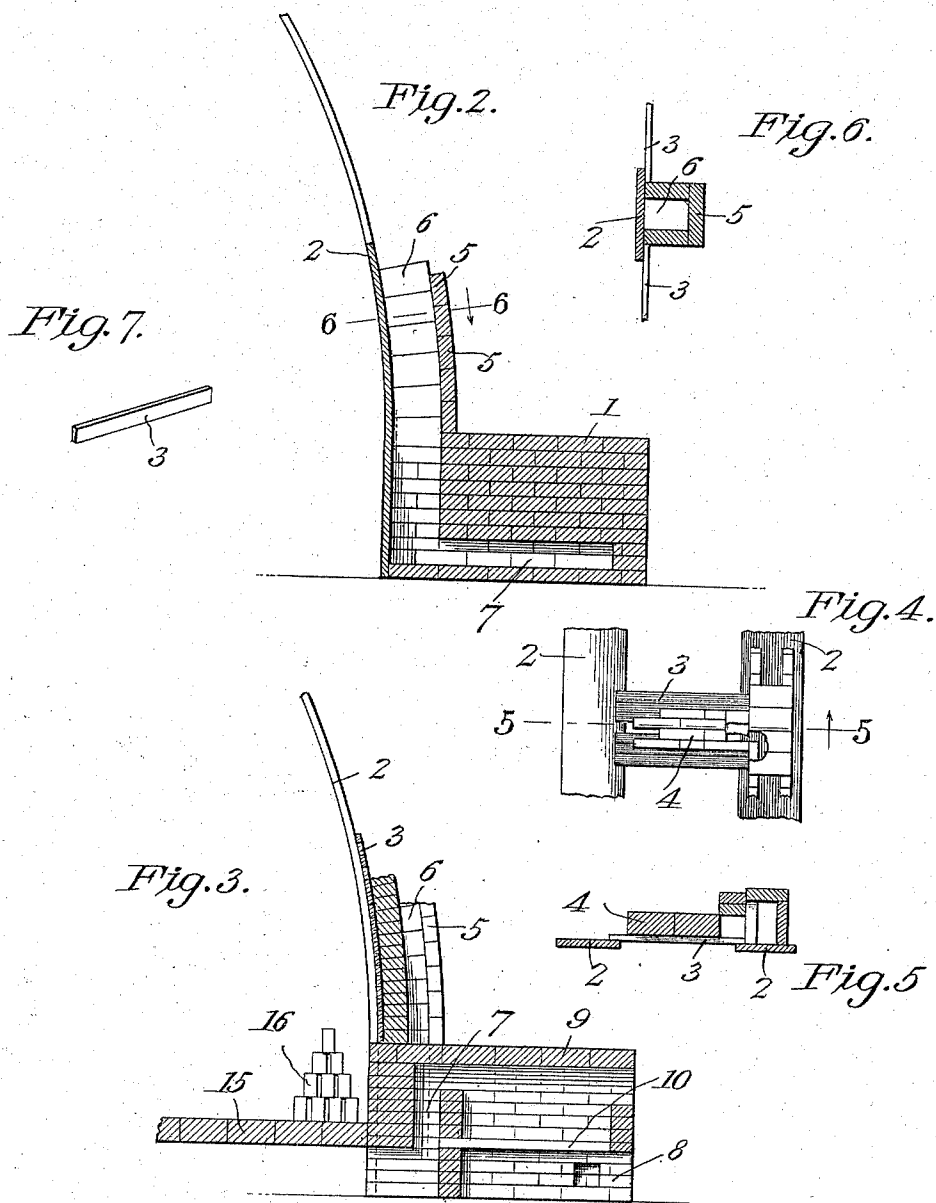
Attorney-

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Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD H. BRADLEY, OF LAYTON, PENNSYLVANIA.

BRICK-KILN.

966,991.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed December 14, 1909. Serial No. 533,016.

To all whom it may concern:

Be it known that I, EDWARD H. BRADLEY, a citizen of the United States, residing at Layton, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Brick-Kilns, of which the following is a specification.

This invention relates to brick kilns, and one of the principal objects of the same is to provide a brick kiln having an arch-shaped crown in order to obviate cold air corners and to insure a thorough circulation of heat throughout the kiln.

Another object of the invention is to provide a brick kiln of arch construction comprising a series of ribs extending over the crown and provided with hot air chambers running over the crown and communicating with the ash pits of the furnaces, in order that by closing the front of the ash pits a down draft of hot air is created, which passes through the bed of fuel and up through the kiln.

Still another object of the invention is to provide a kiln having a damper at the top of the chimney operable by means of a rope or chain to partially or wholly close the smoke duct at certain times to retard the heat within the kiln and to permit a down draft through the kiln whenever desired.

Another object of the invention is to provide a brick kiln of arch-like form made up of spaced metal ribs supporting semi-circular heat passage ways which communicate with the ash pits, and metal bars extending across from rib to rib, said bars being covered with brick and provided with a series of port holes, which may be opened at suitable times to permit cold air to enter the top of the crown and thus cool the kiln from the top downwardly, this construction being of especial advantage for certain kinds of work.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of the kiln made in accordance with my invention, said kiln being shown during the course of construction and parts being shown in section. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 on an enlarged scale and looking in the direction indicated by the arrow. Fig. 3 is a similar section taken on the line 3—3 of Fig. 1 looking in the direction indicated by the arrow. Fig.

4 is a detail plan view of a portion of two of the metal ribs connected together by metal bars for supporting the bricks forming the arch, portions being broken away to better illustrate the construction. Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4 looking in the direction indicated by the arrow. Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 2 looking in the direction indicated by the arrow. Fig. 7 is a detail perspective view of one of the bars which extends across the space between the metal ribs.

Referring to the drawings for a more particular description of the invention, the numeral 1 designates the masonry work or side walls of the kiln and 2 are the arch-shaped metal ribs extending from one wall to the other and built in the masonry work. The ribs 2 are substantially semi-circular or arched and are spaced apart throughout the construction of the crown of the kiln. Metal bars or plates 3 are placed across from one rib to the other with the ends of the bars 3 resting upon the ribs 2, as shown more clearly in Figs. 3, 4 and 5. Bricks or mason work 4 cover the bars 3 extending over the entire crown.

Extending over the metal ribs 2 are brick ribs 5 having heat passage ways 6 within the same, said passage ways communicating through the side walls 1, as at 7, with the ash pit 8 underneath the grate in the furnace 9, the latter being provided with a fire grate of the usual or any suitable construction. It is to be noted that the furnaces are disposed between each alternate pair of ribs, as shown in Fig. 1, and it will be understood that one of the heat passages 6 communicates with each of the ash pits.

As shown in Fig. 4 one of the bars 3 is omitted and the bars are covered with brick, one or more of which may be removed for the purpose of forming a port hole to admit cold air at the top of the crown whenever desired, so that the heat in the kiln may circulate and the kiln cool downwardly.

A chimney 11 at one end of the kiln is provided at its top with a hinged damper 12 to which is connected a lever 13 for operating the same. A chain or cable 14 extends from the lever down to a point within reach of an operator, as shown in Fig. 1. Suitable doors may be provided at the front end of the kiln and if desired a floor 15 may be provided for placing the bricks 16 thereon to be

kiln dried. Metal beams may also be provided for bracing the structure, said beams being connected by chains, braces and turn buckles.

- 5 The operation of my invention may be briefly described as follows. Whenever it is desired to prevent the hot air from passing out of the kiln, the plate, which covers the front of the ash pit, is placed in position to
10 prevent the cold air from passing in under the bed of fuel. The damper 12 may be operated to retard the heat from passing out through the chimney and compelling the hot air to remain within the kiln for a given
15 time.

In kiln drying certain characters of bricks it is found very desirable to permit the heat to gradually descend by cooling off the top of the crown first. This may be accomplished by opening a series of port holes, permitting the cold air to enter, and letting the kiln cool off from the top downward.

From the foregoing it will be obvious that a kiln made in accordance with my invention is very durable, can be installed at comparatively low cost and owing to its arch form obviates the formation of corners and angular spaces which would have a tendency to pocket cold air and prevent its circulation.

30 Another feature of my invention resides in the fact that either an up draft or down draft can be created whenever desired, this being of especial advantage in certain characters of work.

35 Having thus fully described the invention what is claimed as new is:

1. A brick kiln provided with an arched crown composed of a series of spaced metal ribs connected by metal bars, said bars being
40 provided at the top of the crown with port holes for admitting cold air, brick-work ribs

having heat passage-ways leading to the ash pits of the furnaces, a chimney provided with a damper at its upper end, and means for operating said damper.

2. In a brick kiln, the combination of 45 arched ribs spaced apart, metal bars connecting the ribs, masonry work covering the bars, masonry work ribs having hollow hot air passages superposed upon the metal ribs, said hot air passages communicating with the ash pits of the furnaces, and a chimney having a damper at its upper end, said damper being provided with means for opening and closing the same. 50 55

3. In a brick kiln, an arched crown composed of a series of spaced metal arched ribs, bars supported upon the ribs for closing the space between the same, brick work supported upon the bars, hollow brick work ribs supported upon the metal ribs and provided with heat passage ways, furnaces, ash pits under the furnaces, said heat passage ways communicating with the ash pits, and means whereby the top of the crown may be opened for the admission of cold air for cooling the kiln from the top downward. 60 65

4. In a brick kiln, the combination of an arched crown composed of metal ribs, bars extending from one rib to the other, brick-work ribs superposed upon the metal ribs, furnaces, ash pits under the furnaces, heat passage-ways in said brick-work ribs communicating with the ash pits, and a chimney provided with a damper at its upper end. 70 75

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

EDWARD H. BRADLEY.

Witnesses:

C. T. DAVIDSON,
H. J. HUENBAUGH.