

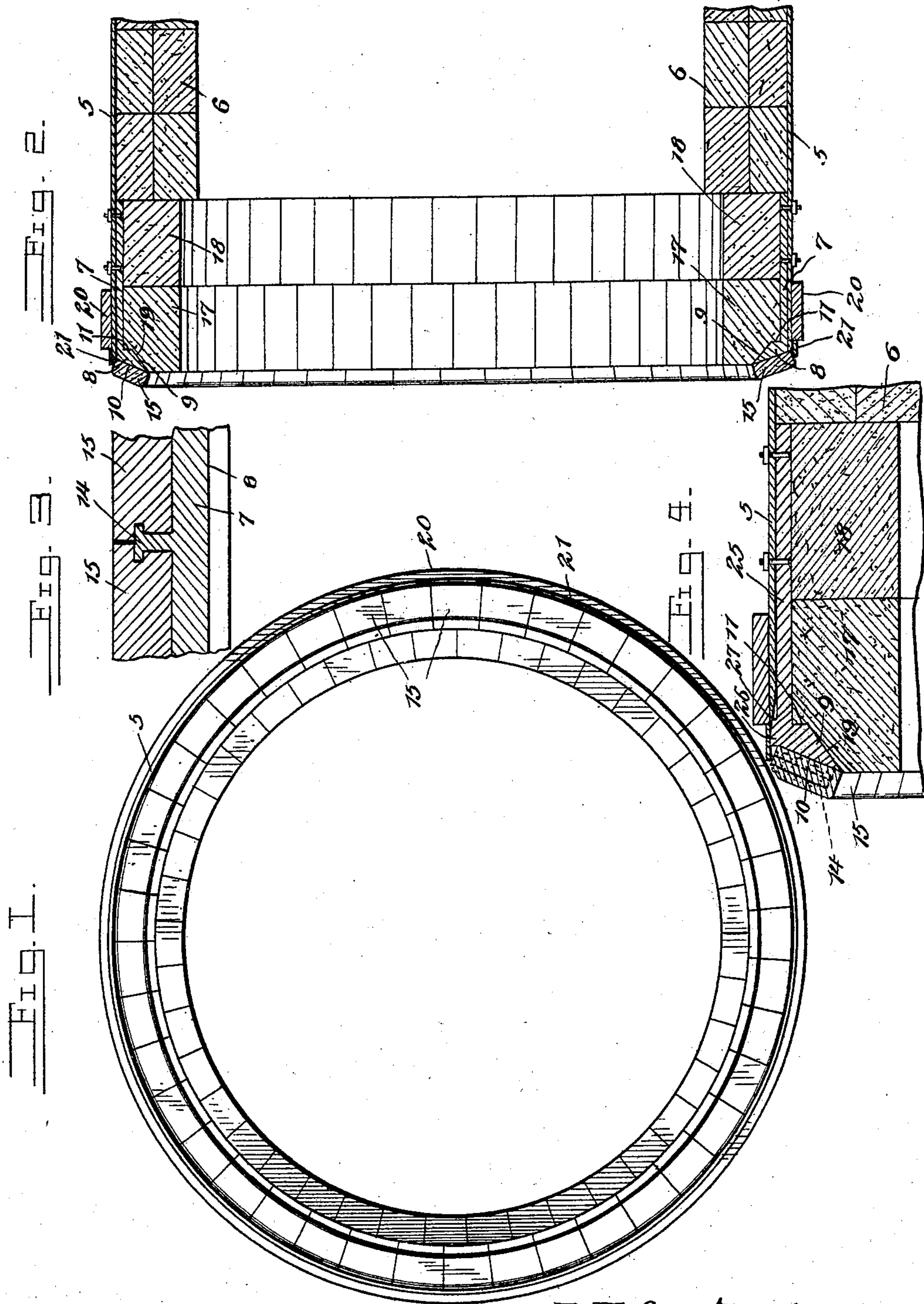
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Patented May 14, 1901.

L. H. SAXTON.
NOSE BRICK RING.

(Application filed Nov. 28, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

LEE H. SAXTON, OF COLDWATER, MICHIGAN.

NOSE BRICK-RING.

SPECIFICATION forming part of Letters Patent No. 674,285, dated May 14, 1901.

Application filed November 28, 1900. Serial No. 38,016. (No model.)

To all whom it may concern:

Be it known that I, LEE H. SAXTON, a citizen of the United States, residing at Coldwater, in the county of Branch and State of Michigan, have invented a new and useful Nose Brick-Ring, of which the following is a specification.

This invention relates to kilns in general, and more particularly to the class of rotary kilns such as are used in the manufacture of cement, wherein an intense heat is used, the invention having specific reference to the means for holding the bricks of the nose-ring in proper position. As kilns of this style are usually made the bricks are held in place by tightly strapping the shell of the kiln, as well understood. The objection to this structure is that under variations in temperature the straps expand and contract, with the result that the bricks, which are exceedingly brittle, check and soon drop out. This necessitates cooling off and stopping the kiln for repairs as the shell is left exposed.

One object of the present invention is to provide a construction of nose-ring wherein the bricks will be so held as to prevent checking, the holding means being itself protected from flames by bricks.

A further object of the invention is to provide a construction of brick-holding casting which may be used in connection with a worn shell to secure an even bearing by preventing bending of the shell.

Additional objects and advantages of the invention will be evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an end elevation of the kiln, showing the nose-ring. Fig. 2 is a longitudinal section through a portion of the kiln, including the nose-ring, and showing the arrangement of the ring-bricks and lining-bricks with the means for holding them in place. Fig. 3 is a sectional view taken through the casting that holds the nose-ring bricks and the bricks for protecting said casting and showing the method of holding the last-named bricks in place. Fig. 4 is a partial longitudinal section, including a portion of

the nose-ring, and showing the form of nose-ring casting used after the shell of the kiln has become worn at its edge.

Referring now to the drawings, 5 represents the shell of the kiln, which is of iron and which has the usual brick lining 6 in the rear of its end, this end portion being formed by the nose-ring, as usual.

The nose-ring in the present instance is made up of an annular casting 7, which when applied to a kiln having an undamaged shell has an even exterior surface, and at the outer end thereof is a depending flange 8, the outer face of which is inclined rearwardly, as is also the lower face or free end, so that this last-named face (shown at 9) lies at an acute angle to the outer face 10. The rear face 11 of the flange is at right angles to the axis of the casting. The nose-ring casting 7 is bolted to the inner surface of the shell 5 at the end thereof, the wall or face 10 of the flange 8 slanting, so as to project beyond the end of the shell, as shown, and on this face and extending in a direction radially of the casting are formed T-shaped keys 14 for engagement with similar grooves in the abutting ends of bricks 15, which bricks are thus held to the face of the flange and extend slightly above the end of the shell to protect the ends of the casting and shell from the action of flame. As shown in the drawings, these bricks 15 are arch-bricks—that is, they are tapered in the direction of one end, so that they may be brought to lie one against another and form a complete ring. The slots in the ends of the bricks are formed so that the slot of one brick will receive one-half of a key 14 and the slot in the adjacent end of the next brick will receive the other half of the same key, these slots in the bricks terminating short of the inner or tapered ends of the bricks, so that the keys are covered at their lower ends and are protected from the action of the flames.

The nose-ring bricks (shown at 17 and 18) are disposed against the inner surface of the casting 7, and being tapered toward their inner sides are fitted snugly in place. The outer ring of bricks 17 have their outer faces recessed, as shown at 19, to permit the faces 9 and 11 of the flange 8 to fit snugly there-against, the two rings 17 and 18 of the bricks

being in mutual contact and arranged to break joints. Against the inner ring 18 of nose-ring bricks are disposed lining-bricks 6, above referred to.

5 Upon the shell 5 may be arranged the usual clamping-ring 20, or this may be omitted, as it forms no part of the present invention, and at the edge of the shell is a clamping-hoop 21, which projects beyond the end of the shell
10 and engages the outer ends of the bricks 15 to hold them tightly against outward displacement. With this construction excessive expansion and contraction of the metallic parts is prevented and checking of the nose-ring
15 bricks does not take place.

When the present invention is applied to an old shell, wherein the edge has been burned away to present a feather-edge, a casting 25 is used, upon the outer surface of which, at
20 its outer edge, is formed a flange 26. In placing this casting it is adjusted to such position that the shell will have a firm bearing against its flange, so that the shell may be clamped firmly.

25 The ring 21 may of course be formed integral or in sections, as also the shell, and various modifications may be made and any suitable materials and proportions may be used for the various parts without departing from
30 the spirit of the invention.

What is claimed is—

1. In a kiln, the combination with the shell, of a casting secured therein at one end thereof and having a flange projecting from the
35 shell, nose-ring bricks disposed within the casting and against the rear and under faces of the flange, protecting-bricks for the casting secured to the outer face of the flange, and a hoop for clamping the bricks in place.

40 2. A nose-ring for kilns comprising a casting having a flange extending inwardly therefrom, nose-ring bricks disposed within the casting and covering the inner faces of the casting and its flange, and protecting-bricks
45 secured to the outer face of the flange.

3. A nose-ring comprising a metallic lining having bricks secured therein to protect the inner face of the lining, and additional bricks

secured against the outer end of the lining to protect the latter.

4. A nose-ring comprising a sustaining-ring having a flange directed inwardly at one end, said flange projecting beyond the end of the sustaining-ring and having keys on its outer
55 face, bricks disposed against the inner faces of the sustaining-ring and the flange, and additional bricks having slotted faces and disposed against the outer face of the flange with their slots receiving the keys.

5. The combination with a kiln-shell, of a
60 lining at one end having a flange extending inwardly of the shell and projecting beyond the end thereof, said flange having keys on its outer face, bricks disposed against the inner surface of the lining and the adjacent
65 faces of the flange, additional bricks disposed against the outer face of the flange and having slots with which the keys are engaged, the last-named bricks projecting beyond the
70 end of the shell, a hoop disposed upon the shell and engaging the last-named bricks to hold the latter against outward displacement, and bricks against the inner face of the shell.

6. In a kiln, the combination with a shell having a tapered edge, of a lining disposed
75 against the inner face of the shell in the rear of the taper and having a flange resting against the tapered portion to sustain it, nose-ring bricks disposed against the lining, and a clamping-ring upon the shell for clamping
80 the latter against the lining and its flange.

7. A brick-holding ring for nose-rings having a flange at one end provided with keys upon a face thereof for engagement with
85 slotted bricks.

8. A brick-holding ring for nose-rings having a flange on its outer periphery to receive the feather-edge of a shell against the inner face of which the ring is disposed.

In testimony that I claim the foregoing as
90 my own I have hereto affixed my signature in the presence of two witnesses.

LEE H. SAXTON.

Witnesses:

W. L. ANDREWS,
D. H. WOOD.