

No. 847,859.

PATENTED MAR. 19, 1907.

W. R. WARREN.
ROTARY KILN.

APPLICATION FILED OCT. 24, 1905.

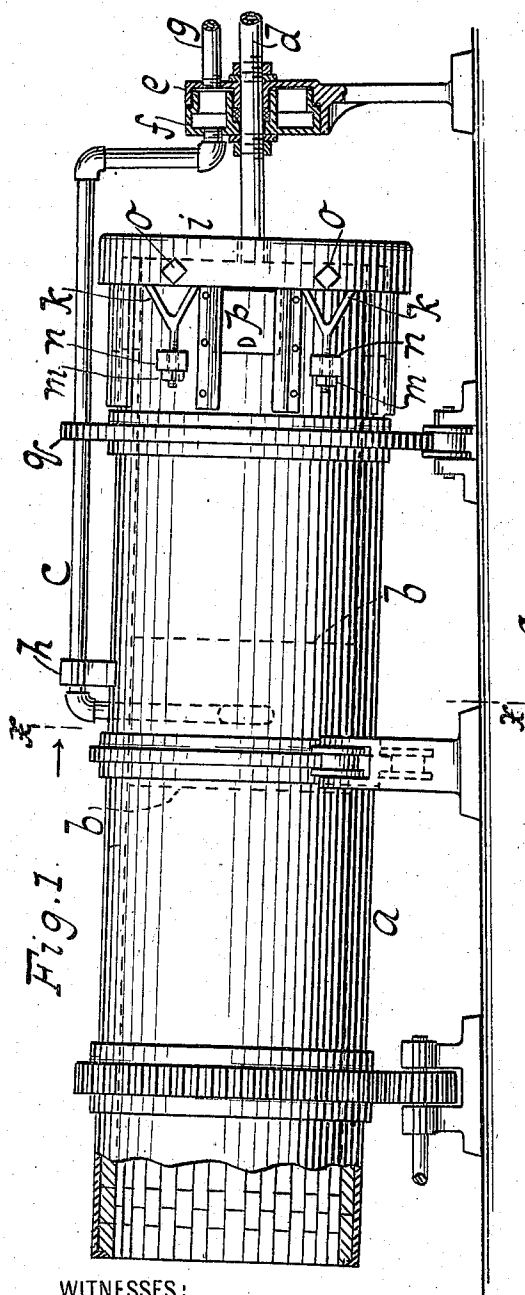


Fig. 1.

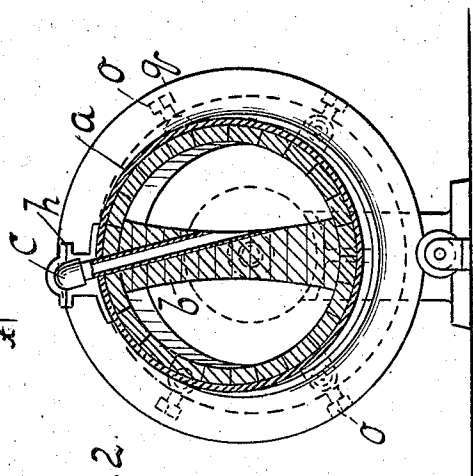


Fig. 2.

WITNESSES:

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ROTARY KILN.

No. 847,859.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed October 24, 1905. Serial No. 284,196.

To all whom it may concern.

Be it known that I, WILLIAM R. WARREN, a citizen of the United States, residing at Manhattan borough, in the county of New York and State of New York, have invented new and useful Improvements in Rotary Kilns, of which the following is a specification.

This invention relates to means by which the operation of the kiln can be expedited or regulated and by which the operation of the kiln can be accurately observed.

This invention is set forth in the following specification and claim and illustrated in the annexed drawing, in which—

Figure 1 is a sectional view of a kiln embodying this invention. Fig. 2 is a section along *x x*, Fig. 1.

In the drawing is shown a rotary kiln comprising a shell or body part *a*. A partition is shown at *b* extending part of or all the length of the kiln.

An intake *c* is adapted to introduce fuel or the like into the interior of the kiln at an intermediate point or at a point or points of the outer shell between the ends of the same. One or more such intakes, as *c*, can be applied.

An intake or main fuel-inlet *d* is passed through an end of the kiln or outer shell *a*. About said main inlet is placed a stationary chamber-section *e*. A rotary chamber-section *f* communicates with the first section, the joints therebetween being suitably tightened.

If any gas or the like is led by supply *g* to the chamber *e f*, the same, passing through intake *c*, enters an inner or intermediate portion of the kiln. This intake *c* rotates with or is secured by suitable fastenings *h* to the kiln.

The word "fuel" above is intended to cover gas, air, or other material or mixture of materials.

The intake *c* can be used as required, for example, to convert non-combustible matter in the kiln into combustible or to withdraw contents of the kiln for analysis or other purposes. The air needed, for example, for primary combustion or for the combustion of material from the intake *d* can be supplied by intake *c*, or the pipe *c* can also be used to introduce fuel for the main combustion or to withdraw contents from the kiln at a certain

stage of the operation for making a test or for other purposes.

The pipe or intake *c* can enter the kiln at the partition or at any other intermediate point. The pipe *c* can enter at or through one or more partitions, if desired.

This invention can be applied to kilns as now constructed without partition or without being subdivided into compartments.

The shield *i* is shown removably connected to the shell or kiln by suitable means, such as straps *k*, which by turnbuckles or nuts *m*, engaging connecting-points, such as lugs or eyes *n*, can be tightened up to hold the shield to its place. The shield shown rotates with the kiln.

The clinker or other matter to be discharged at the outlet end can pass out through suitable exits or holes in the shell, and shutters or the like *p* can be slid or moved to close the holes or outlets more or less, as desired, for example, to regulate or vary the amount of air entering the kiln at this portion.

The regulatable closures *p*, in connection with the intake *c*, can be operated to produce the best results in the combustion of the fuel.

The kiln can be rotated by suitable mechanism, and one of the tires is shown at *q* of such size as to surround or engage the intake *c*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A rotary kiln having an inner partition and an intake extended through the shell and partition into the interior of the kiln.

2. A rotary kiln having an intake-opening into the kiln at a point removed from the wall of the body thereof and extended through and made to rotate with the shell of such kiln.

3. A rotary kiln having an intake, a rotary chamber-section made to communicate with said intake, and another chamber-section made to communicate with or supply material to the rotary chamber-section.

4. A rotary kiln having an intake at one end, a rotary chamber about said intake, and another intake or supply made to communicate with the chamber and to enter an intermediate portion of the kiln.

5. A rotary kiln having a tube or intake

positioned exteriorly thereof and opening
therein, a tire arranged around the periph-
ery of the kiln and extending about the in-
take, said tire carrying the intake when the
5 kiln rotates, and a rotatable chamber-section
communicating with a source of supply and
carried upon the outer end of the intake.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

WILLIAM R. WARREN.

Witnesses:

EDWARD WIESNER,
GEORGE HULSBURG.