

(No Model.)

F. KRANZ.
LIMEKILN.

No. 407,406.

Patented July 23, 1889.

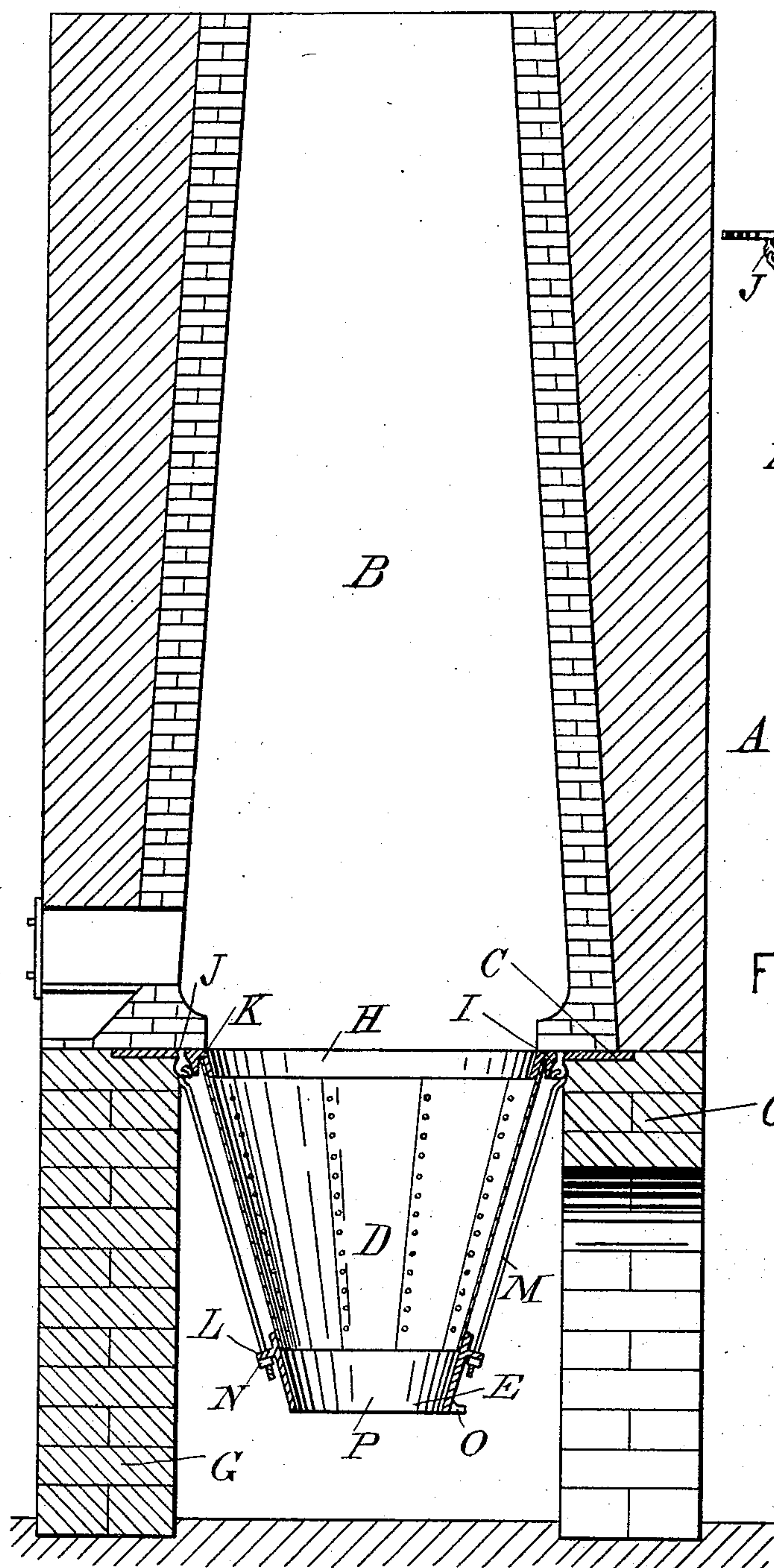
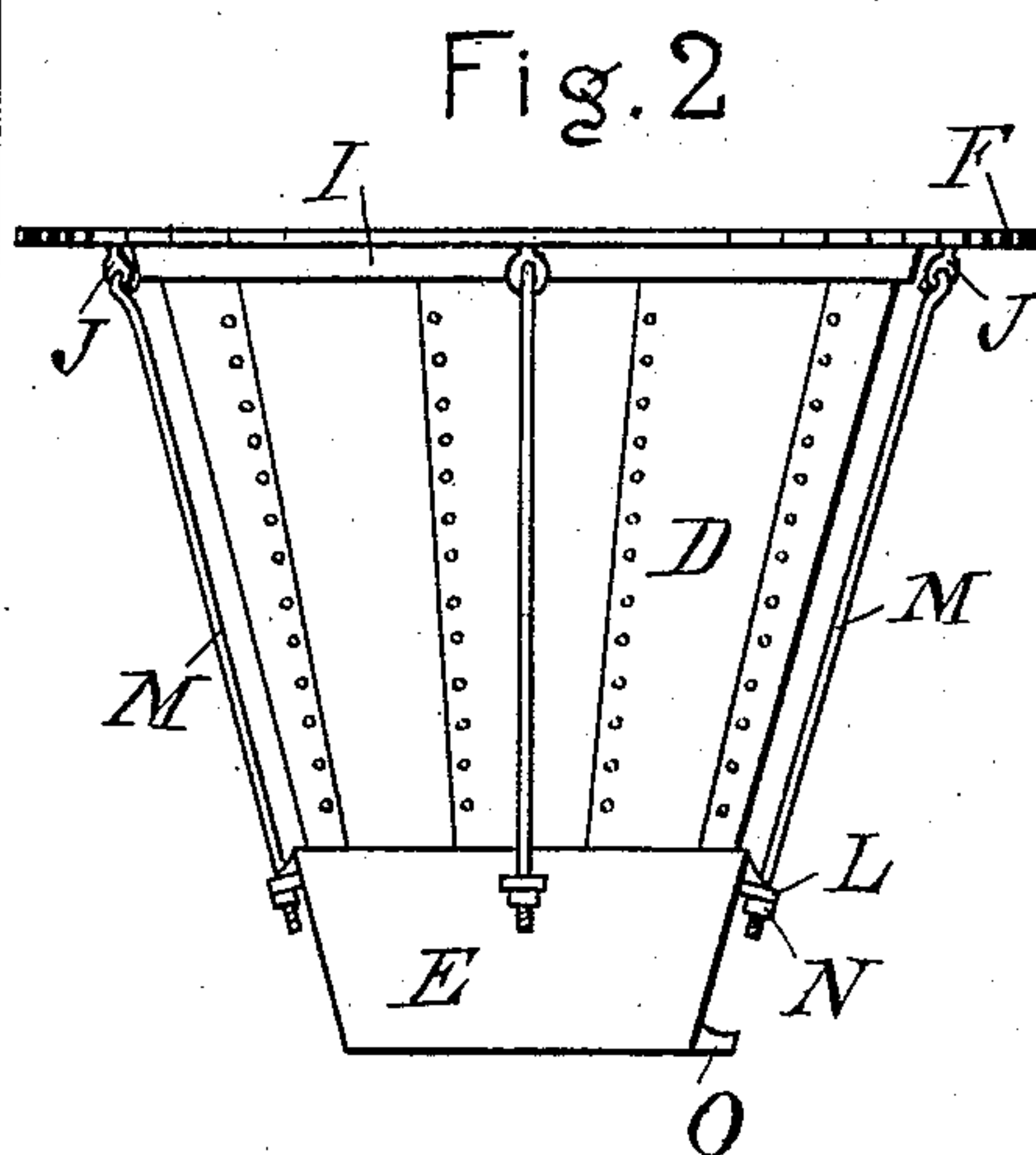


Fig. 1



Witnesses:

J. Paul Mayer
H. A. Ross.

Inventor:

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Att'y

UNITED STATES PATENT OFFICE.

FREDRICH KRANZ, OF SANDUSKY, OHIO.

LIMEKILN.

SPECIFICATION forming part of Letters Patent No. 407,406, dated July 23, 1889.

Application filed April 25, 1889. Serial No. 308,521. (No model.)

To all whom it may concern:

Be it known that I, FREDRICH KRANZ, a citizen of the United States, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Limekilns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in limekilns; and the invention consists in the peculiar construction of the ordinary cooling-nozzle for such kilns, whereby great simplicity in construction is obtained, with ease of repair, and with better satisfaction in the use of such kilns, all as more fully hereinafter set forth.

In the drawings which accompany this specification, Figure 1 is a vertical central section through a limekiln to which my invention is applied, and Fig. 2 is a side elevation of my improved nozzle detached.

A is a kiln of any suitable description having a fire-chamber B, at the base of which is secured my improved nozzle, which consists of the top plate C, preferably of cast-iron, the cone D, preferably of sheet metal, and the end nozzle E. The top plate C consists of the annular bearing-plate F, adapted to rest on a suitable base G, which in ordinary constructions is the foundation for the kiln, the conically-contracted flange H, and the annular flange I, the two flanges being so arranged as to form between them a rest K in the shape of an inverted V. At suitable intervals in the plate C are secured the eyebolts. The cone D is preferably constructed of sheet metal riveted together, and of suitable size at the top to fit on the outside of the flange H, with its edge engaging into the point of the recess K, its lower end being contracted to about the sized opening which it is desired to have for the exit of the product.

To hold the part D in position, I secure over its lower end the cast-iron nozzle E, which is provided with suitable flanges or eye-plates L, coinciding with the eyebolts in the base C.

M are bolts having hooks at their upper ends adapted to engage into the eyebolts J, of suitable length to pass through the plate L, and secured in position by means of the nuts

N, at their lower ends bearing against the eye-plates L. In putting the parts together in this manner I preferably place in the angle of the recess K a suitable non-combustible material of plastic nature, so that when the bolts are drawn tightly up an air-tight joint is formed between the cone and the base-plate.

O is a flange on the nozzle E, to which may be hinged the usual cover for the lower end of the kiln.

The parts being thus constructed and arranged, they are adapted to operate as follows: As the lime drops down into the cooling-cone D, it frequently becomes lodged, and it is necessary to pound upon the outside to dislodge it and allow it to drop through the aperture P. This frequently injures the cone so that it is necessary to replace it, which may be readily done by unscrewing the nuts, removing the nozzle and the cone, repairing the cone, and then replacing it with a new one, as may be found necessary.

In previous constructions of such devices the cooling-chamber has been riveted upon the base, and the entire strain of the contents of the cone coming upon the rivets would tear out the metal, involving great loss and with a constant menace to the attendants. By my construction the entire load is borne by the bolts M, being securely fastened into the plate C, and having a wide bearing at the base in the nozzle E the strain is not brought upon the rivets of the cone at all, and a much longer life of the parts is the result in use.

It has also been found difficult under the heat to which these sheet-metal cones are subjected to secure a tight joint between the top plate C and the cone D when the two are riveted together; but by my construction a perfectly air-tight joint may be secured under all circumstances. The nozzle in former constructions has simply been an aperture through the base of the sheet-metal cone, which was frequently damaged and torn in use, requiring constant repairing or replacing, while with my construction this is entirely obviated.

What I claim as my invention is—

1. In a kiln, a cooling-chamber consisting of a top plate and cone secured thereto, a

nozzle engaging upon the lower end of the cone, and connection between the top plate and the nozzle, substantially as described.

2. In a kiln, and in combination with the
5 firing-chamber, a cast top plate provided with eyebolts, and the inverted-V-shaped recess, a sheet-metal cone engaging into said recess, a nozzle at the lower end of the cone, and connections between the top plate and the nozzle,
10 zle, substantially as described.

3. In a kiln, a cooling-chamber consisting of the top plate having eyebolts and the inverted-V-shaped recess, a sheet-metal cone

engaging with its upper end into said recess, a non-combustible packing in said recess, a
15 nozzle provided with lugs, and bolts connecting the top plate and the nozzle, substantially as and for the purpose described.

In testimony whereof I affix my signature, in presence of two witnesses, this 3d day of April, 20
1889.

FREDRICH KRANZ.

Witnesses:

PHIL. H. TRAUB,
MARTIN P. BYRIEL.