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TUNNEL KILN

Filed May 13, 1930

FIG. 1.

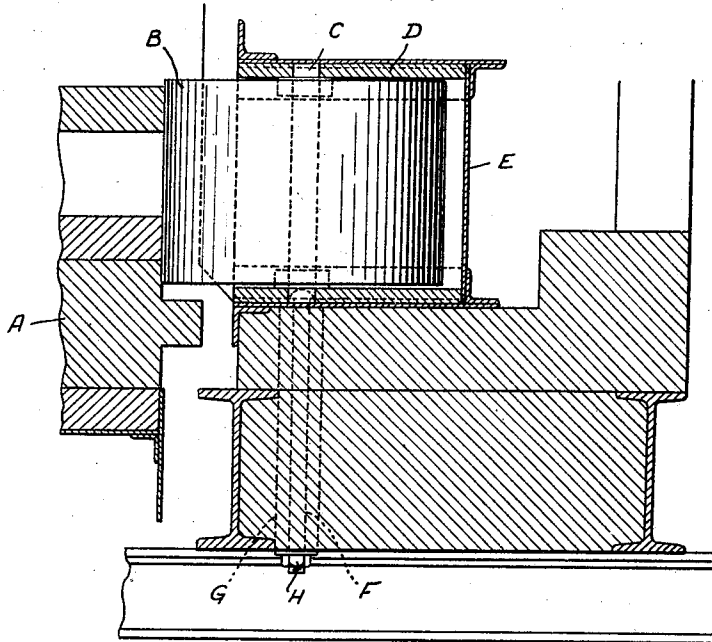
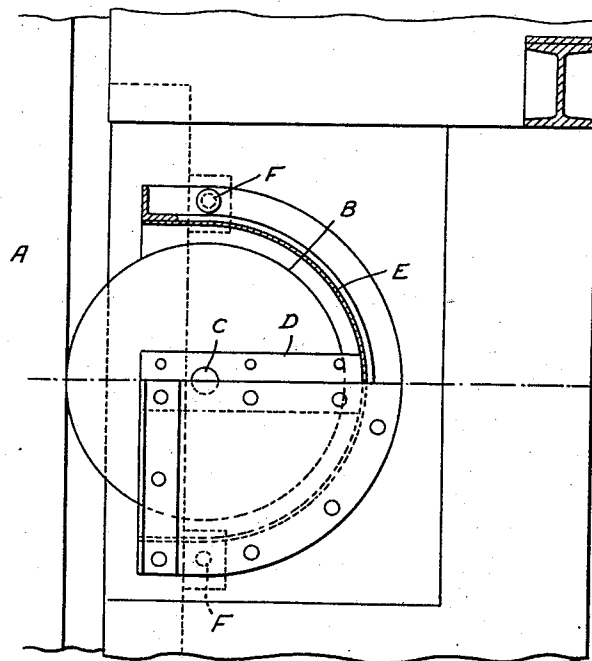


FIG. 2.



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TUNNEL KILN

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In tunnel kilns having a travelling platform or the equivalent thereof on which the goods are carried, stoppages frequently occur owing to the deformation of the platform, whereby the width is increased locally. This increase may be due to lateral bulges or deformations caused by heat or otherwise, or to expansion of joints which displaces the slabs or bricks of which the platform is composed. Whether the kiln be annular or straight, the platform emerges from, and has to re-enter the tunnel and any increase of width of the platform may be sufficiently great to prevent smooth re-entry, whereby stoppage is caused.

According to this invention, this difficulty in operating the kiln is obviated by provision of a device that may be regarded as a gauge through which the platform has to pass on its way during its travel through the kiln.

The device may consist of two surfaces placed at the level of the platform and at a distance apart equal to the normal width of the platform, or so nearly equal thereto that the edges of the platform only just clear the surfaces as the platform passes between the surfaces.

In this manner bulges or deformations are smoothed out, and displaced brickwork returned to place, by contact with and pressure due to the said surfaces.

Preferably the surfaces are those of rollers mounted on vertical axes, but whatever the character of the surfaces they may be urged by springs or the like to maintain contact with the edges of the platform, instead of being so placed that there is a clearance.

The invention is illustrated in one form in the accompanying drawings, Fig. 1 being a transverse vertical section and Fig. 2 a plan view of which the upper half is a sectional plan.

In the drawings A is the tray or travelling platform upon which the goods are carried into and through the tunnel of the kiln.

Mounted upon the framework at a convenient point in the loading and unloading section of the kiln is a pair of rollers B, only one of which is shown in the drawings, the other being similarly mounted at the other

side of the tray. Each roller is free to revolve upon a vertical pin C fixed in bars D which in turn are riveted or otherwise secured to the top and bottom plates of a flanged casing E forming a housing for the roller. The casing is secured to the main frame or fixed structure by means of bolts F which pass downwardly through the bottom flanges of the housing E and slots G in the fixed concrete structure, and are secured thereto by means of nuts and washers indicated at H. The clearance within the slots G permits of any necessary adjustment of the periphery of the rollers with respect to the edge of the travelling platform or tray, the rollers being adjusted so as to be just in contact or just out of contact with the edge of the tray when the latter has its normal width.

The pressure exerted by the rollers upon the edges of the tray or platform as the latter moves past them serves to break or smooth off any excrescences on the edge of the tray, or return to their places any bricks or slabs which may have been displaced for any reason during the working of the kiln, as for example by the expansion of joints due to the heating of the platform.

The rollers B or their equivalents are preferably, but not necessarily, disposed immediately opposite each other at the two sides of the tray or travelling platform, and further, more than one pair of rollers or their equivalents may be provided, in which case the first pair to be encountered by the travelling platform on its emergence from the tunnel would be spaced apart a distance somewhat greater than the normal width of the platform, while the final pair of surfaces would be spaced apart a distance equal to the normal width of the platform, so that the reduction or removal of irregularities on the edge of the platform would be effected by stages.

In tunnel kilns in which the goods are carried through the tunnel on assembled trucks, the floors of these trucks are liable to become disorganized in the same manner as the travelling platform hereinbefore referred to, and the same means can be used for restoring the floors of the trucks to efficient working con-

dition as have been herein described with respect to tunnel kilns having travelling platforms.

I claim:

5 1. In tunnel kilns a device for ensuring that the normal width of the travelling platform or its equivalent will not be exceeded so as to prevent its smooth re-entry into the tunnel, consisting of surfaces disposed at opposite sides of the platform and spaced to
10 smooth out or replace by pressure any parts of the platform projecting laterally beyond the normal width thereof.

2. A device according to claim 1, wherein
15 the pressure on lateral projections from the sides of the platform is exerted by vertical rollers disposed on opposite sides of the platform.

3. A device according to claim 1, wherein
20 the pressure-exerting surfaces are adjustable with respect to the edges of the platform.

4. A device according to claim 1, wherein the surfaces disposed at opposite sides of the platform to replace by pressure any parts of
25 the platform which project laterally beyond the normal width thereof comprises rollers rotatable on axes at substantially right angles to the direction of movement of the platform and disposed on opposite sides of the
30 platform and adjustable with respect to the edges of the latter.

In testimony whereof I have signed my name to this specification.

ARTHUR McDOUGALL DUCKHAM.

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