

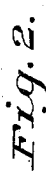
March 16, 1937.

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2,073,724

ANNEALING BASE

Filed May 8, 1936



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UNITED STATES PATENT OFFICE

2,073,724

ANNEALING BASE

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Application May 8, 1936, Serial No. 78,632

2 Claims. (Cl. 263—49)

This invention relates to a base for supporting a charge of material during heat treatment.

Cover type furnaces such as shown in Wilson Patent No. 1,952,402 have come into wide use, particularly for the annealing of sheets. Considerable difficulty has been experienced, however, with the bases on which the sheets are supported during annealing. These bases are subject directly to the annealing temperature and considerable warpage and frequent failure there-
of has been experienced with the constructions used heretofore.

I have invented a novel form of base for a cover type furnace which is well adapted to withstand the severe usage to which it is subject and has other important advantages over base constructions which have been used previously. In accordance with my invention, I provide a base comprising a plate having spaced ribs extending outwardly therefrom. The plate is adapted to rest on a refractory layer supported on a suitable foundation. In the preferred form of the invention, I provide ribs on opposite sides of the plate so as to make it reversible and thus increase its useful life.

A complete understanding of the invention may be obtained from a study of the accompanying drawing and the following detailed description of a preferred embodiment. In the drawing:

Figure 1 is a plan view of the base; and Figure 2 is a partial longitudinal section through a furnace having the base incorporated therein.

Referring in detail to the drawing, the base of my invention comprises a plate 10 provided on opposite sides with spaced upstanding ribs 11. The base is preferably a steel casting, the ribs being integral with the plate, although this is not essential. The ribs 11 are sinuous or serpentine in character. Each rib on one side of the plate has a counter part on the opposite side. The ribs thus overlie each other, but as shown in Figure 1, they are staggered relative to each other.

A rim flange 12 extends around the plate 10 providing a channel 13 for a comminuted sealing material such as sand. The ribs at the ends of the base have holes 14 formed therein to facilitate the attachment of crane hooks.

In use, the base is laid on top of a refractory layer 15 carried by any suitable foundation and adapted to support a cover type furnace indicated generally at 16. A bottom plate 17 is first laid on the base and a charge of sheets, indicated at 18,

deposited thereon. An inner cover 19 is usually disposed over the charge. Its lower edge projects into the sealing material 20 with which the channel 13 is provided. The furnace cover is then lowered onto the base and the heating cycle begun.

The base construction described is particularly advantageous in that the ribs 11 on the bottom provide free passage for heating gases under the charge. The refractory layer 15 may be notched under the rim 12 along the sides of the base to permit heating of the lower portion of the charge by convection from the hot gases in the furnace and conduction through the base. Another advantage of the construction shown is that if the base should tend to warp for any reason, it may be turned over. When again heated to the annealing temperature, the weight of the charge will tend to remove any warpage. By making the base reversible, furthermore, the useful life thereof is increased. Since the base is not attached to the refractory layer, reversal is a simple matter.

The sinuous character of the ribs 11, furthermore, strengthens them against being bent down under load, and makes them self-supporting. The load on the base is transmitted directly to the foundation at the points where the top and bottom ribs intersect. There is thus no chance for bending or warping of the base. The casting of the base does not involve any serious problems.

Although I have illustrated and described herein but one preferred embodiment of the invention, changes in the construction disclosed may be made without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A base for an annealing cover comprising a plate having spaced upstanding ribs on both sides whereby when the base is laid flat on a furnace hearth, the ribs on the lower side support the plate thereabove, and the ribs on the other side are adapted to support a charge of material above the plate.

2. A base for an annealing cover comprising a plate having spaced upstanding ribs on both sides whereby when the base is laid flat on a furnace hearth, the ribs on the lower side support the plate thereabove, and the ribs on the other side are adapted to support a charge of material above the plate, the ribs on opposite sides of the plate being staggered and overlapping.

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