B. P. HAZELTINE.

SOAKING PIT.

APPLICATION FILED NOV. 8, 1920.

1,380,713.

Patented June 7, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

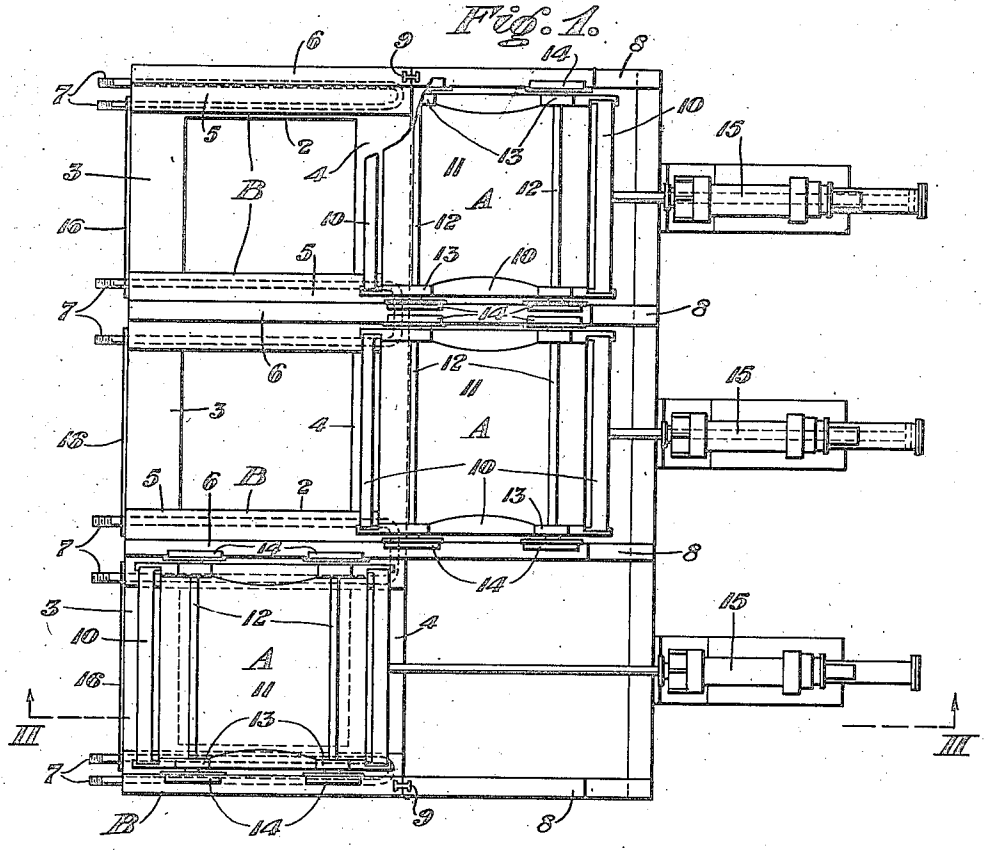
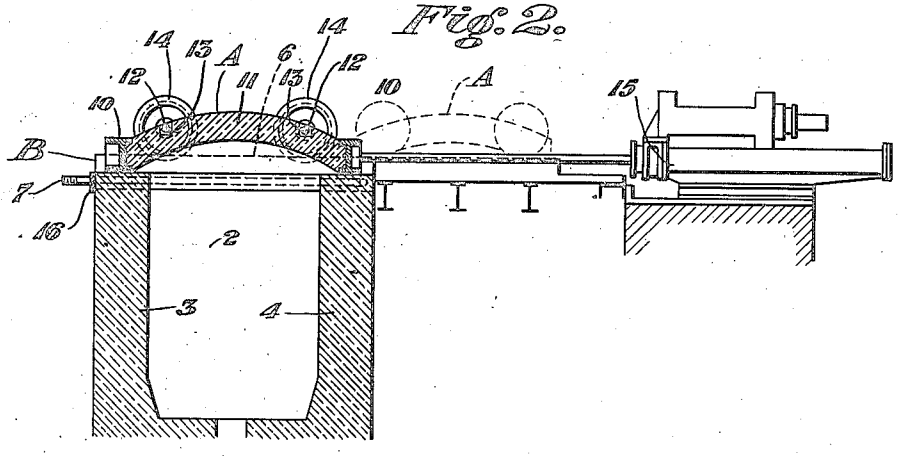


Fig. 2.



Witnesses:

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2 SHEETS—SHEET 2.

Fig. 3.

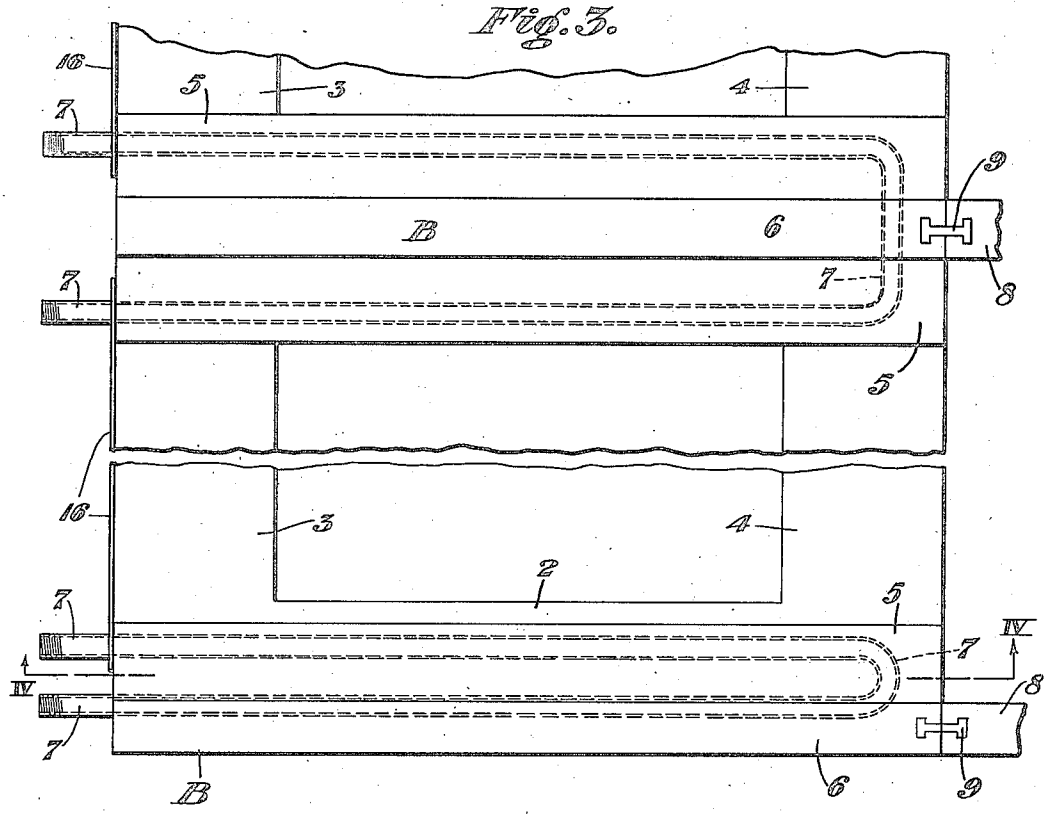


Fig. 4.

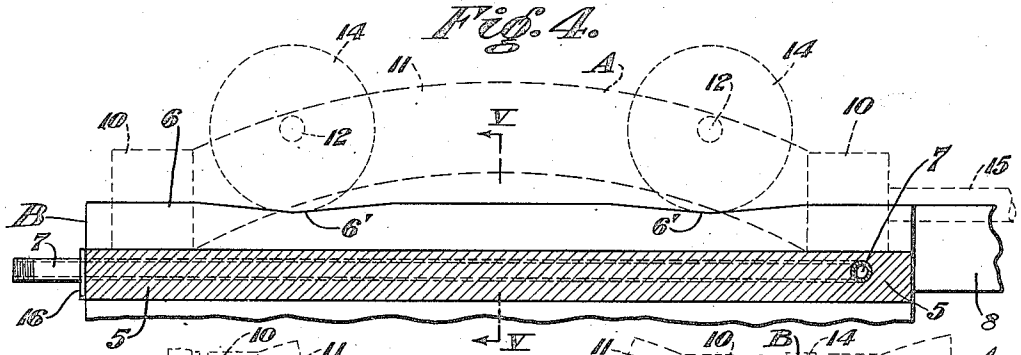
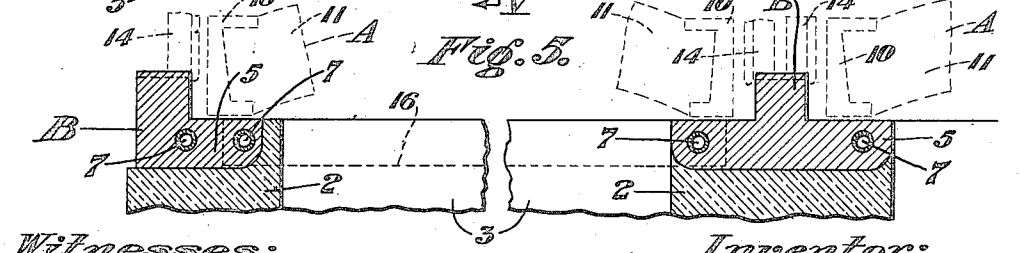


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

BENJAMIN P. HAZELTINE, OF WHEELING, WEST VIRGINIA.

SOAKING-PIT.

1,380,713. Specification of Letters Patent. Patented June 7, 1921.

Application filed November 8, 1920. Serial No. 422,449.

To all whom it may concern:

Be it known that I, BENJAMIN P. HAZELTINE, a citizen of the United States, and resident of Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Soaking-Pits, of which the following is a specification.

This invention relates to the construction of furnaces for heating metal, and more particularly to furnaces known as soaking pits, and used in heating ingots preparatory to the ingot rolling operations.

The high temperatures employed in soaking pits in heating ingots for rolling, causes the coping plates and other metal portions of the mouth of the pit to burn and warp, and when the refractory walls wear or crumble, the tops will sag so that they must be replaced, necessitating the shutting down of the pit, and entailing a considerable expense.

With my invention, the metal tops are artificially cooled to prevent over-heating and its accompanying evils. Experience has proven that the life of a pit is materially lengthened by the use of my invention. With the old style of pit it was necessary to rebuild the pit about every six months, while with my improved form, a pit will last from twenty to twenty-one months. The advantages of being able to continually use a pit for such a length of time without requiring repairs will be obvious to anyone skilled in the art.

One of the principal objects of my invention is to provide an artificially cooled top that may be applied to the ordinary approved design of soaking pits.

Another object is to so construct such top that it may utilize water or other cooling fluid for cooling purposes.

A further object is to generally strengthen and improve the top construction of soaking pits.

Other objects and advantages will be readily apparent to those skilled in the art, and will be more particularly described and pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of one of a bank of soaking pits embodying my invention.

Fig. 2 is a cross-sectional view on the line II—II of Fig. 1.

Fig. 3 is an enlarged fragmentary top plan view of a part of the battery of units shown in Fig. 1, with the covers removed.

Fig. 4 is a cross-sectional view on the line IV—IV of Fig. 3, partly broken away and showing the cover in broken lines.

Fig. 5 is a sectional view on the line V—V of Fig. 4.

In the drawings a bank of three pits is shown. However, it will be understood any number desired may be used. The pits have side walls 2 and front and back walls 3 and 4 of refractory material.

Mounted on top of the side walls 2 are artificially cooled top plates or tracks B on which the top closure or door A rides. The tracks or top plates B are composed of cast metal and have a base portion 5 adapted to abut and be secured to the top of the side walls, and a track or rail portion 6. The track portion 6 is centrally arranged on the plates, which are adapted to be secured on the top of a side wall separating two pits, while the plates for use on the end side wall have the track formed even with one edge of the plates.

The track portion 6 of the plates B have two slight recesses or depressions 6′ formed on their upper surfaces for a purpose to be described.

Pipes 7 are embedded in the base 5 of each of the plates B and are adapted to continually circulate a cooling fluid through the plates to prevent overheating and its accompanying disadvantages.

The pipes 7 extend past the front end of the plates B, and a spacing plate 16 having suitable spaced apertures is passed over the pipes and serves to bind the forward ends of the plates B together in spaced relation.

Other rail or track members 8 are adapted to be secured to the rear end of the track members 6 by means of I-shaped anchors or coupling pins 9, and extend rearwardly over the regenerators for the pits (not shown), for the door A to ride on when moved away from the pit.

The door A is of the ordinary arch construction, having binding side plates 10, an arched portion 11 of refractory material, and having axles 12 journaled in bearings 13 carrying wheels 14. The door A is adapted to be moved back and forth upon the track portions 8 and 6 in any well-known manner, as by a hydraulic cylinder 15 or other power or other means. When the

door A reaches the point of travel at which the wheels 14 are in the depressions or recesses 6′, the edges of the body will strike the base 5 of the top plates B, thus closing the pit.

The general operation of the pit is well-known to those skilled in the art, and will not be discussed here in detail. However, particular attention is directed to the cooling feature of the top plates, and the many advantages gained therefrom. The artificially cooled plates will remain rigid at all times, and will not sag or warp, neither will they burn as quickly as uncooled plates.

I claim:—

1. In a soaking pit, the combination with the side walls, of top plates, and means for artificially cooling said plates.

2. In a soaking pit, the combination with the side walls, of top plates adapted to have a cooling fluid circulate therethrough, and closure members for said pits adapted to travel on said plates.

3. The combination with a soaking pit, having side and end walls, and a top door for closing said pit, of top plates mounted on said side walls, and pipes passing through said plates for the circulation of a cooling fluid.

4. The combination with a soaking pit, having side and end walls, and a top door for closing said pit, of top plates for said side walls, said plates comprising a base and track portions, and passage-ways formed in said base portion for the circulation of a cooling fluid.

5. A top plate of the side walls of a soaking pit comprising a base, a track portion formed integral with and raised above said base, and a pipe passing through said base adjacent each side edge to provide for the circulation of a cooling fluid.

In testimony whereof I have hereunto signed my name.

BENJAMIN P. HAZELTINE.