

No. 697,788.

Patented Apr. 15, 1902.

D. W. BLAIR.
METALLURGICAL CRANE.

(Application filed Jan. 17, 1902.)

(No Model.)

Fig. 1

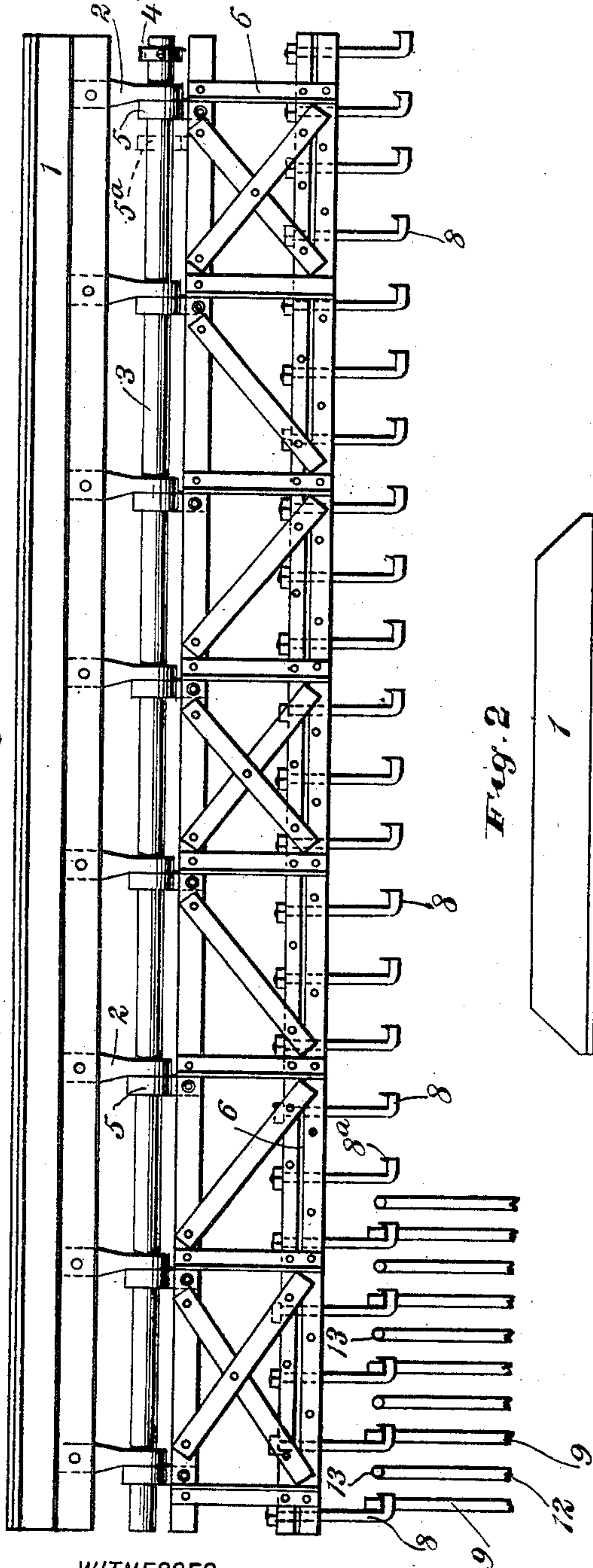
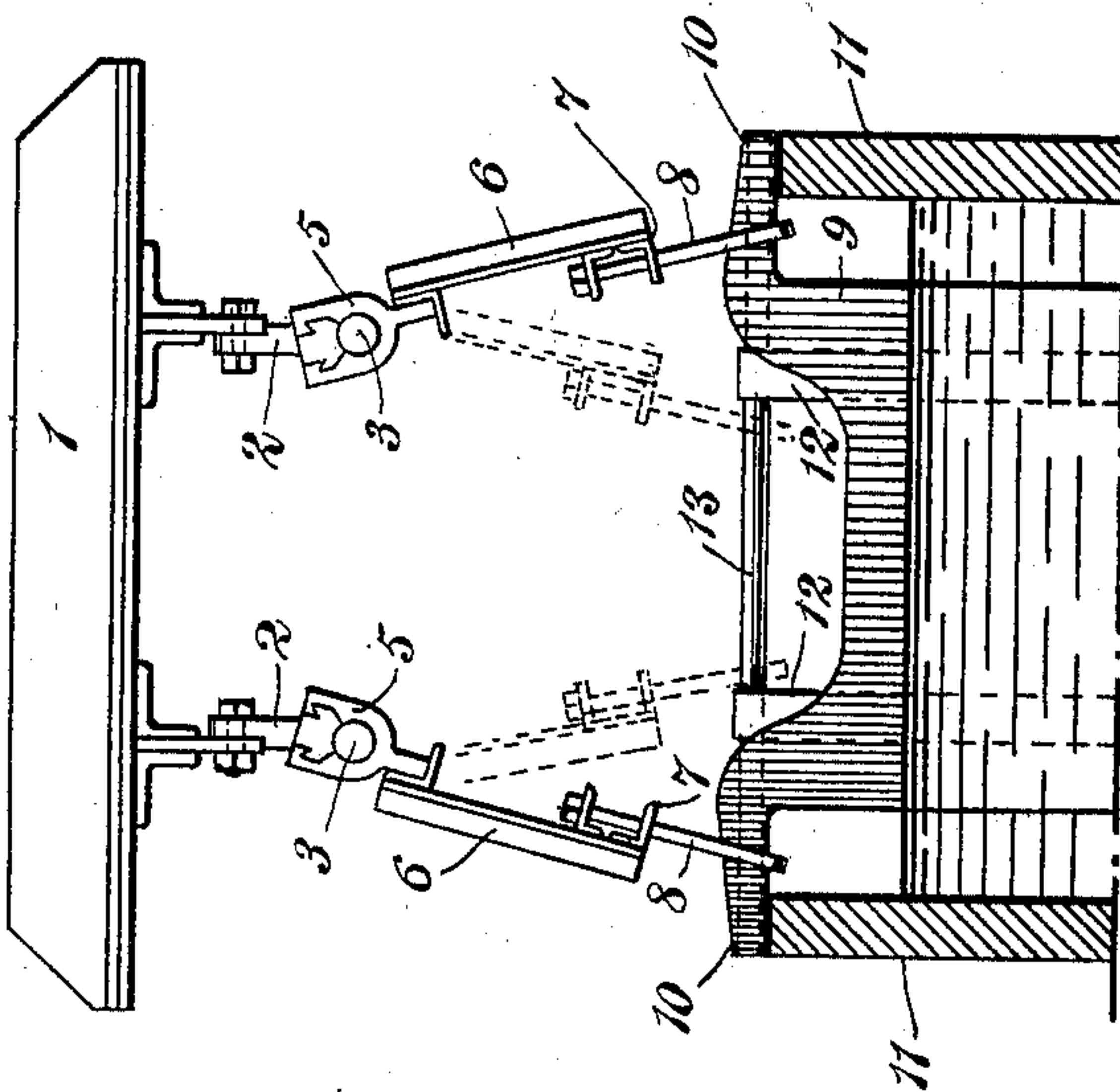


Fig. 2



WITNESSES:

John A. Burphom
Walton Harrison

INVENTOR

David W. Blair

BY

Mum
ATTORNEYS

UNITED STATES PATENT OFFICE.

DAVID WESLEY BLAIR, OF PERTH AMBOY, NEW JERSEY, ASSIGNOR OF
ONE-HALF TO JAMES C. MCCOY, OF PERTH AMBOY, NEW JERSEY.

METALLURGICAL CRANE.

SPECIFICATION forming part of Letters Patent No. 697,788, dated April 15, 1902.

Application filed January 17, 1902. Serial No. 90,114. (No model.)

To all whom it may concern:

Be it known that I, DAVID WESLEY BLAIR, a citizen of the United States, residing at Perth Amboy, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Metallurgical Cranes, of which the following is a full, clear, and exact description.

My invention relates to metallurgical cranes—that is, instruments to be used for handling the anodes and cathodes of a metallurgical bath, more particularly of the kind used in copper-works.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation showing my invention in use. Fig. 2 is an end elevation of the same, the metallurgical bath being shown partly in section.

A frame 1 of the usual pattern employed for the purpose is provided with depending hangers 2 2, which support shafts 3 3, said shafts being normally free to rock. Set collars 4 are secured upon one end of each of the shafts 3 3, each collar being adjacent to one of the bearings 5. This is for the purpose of enabling the shafts to be shifted longitudinally. When thus shifted, the bearings 5 adjacent to the set collars 4 will occupy the position indicated by dotted lines at 5^a. Skeleton frames 6 are mounted upon the bearings 5 and are free to rock. Upon the lower ends of these frames 6 are brackets 7, supporting depending hooks 8, provided with lateral extending bills 8^a for the purpose of handling the electrodes. The anodes are shown at 9 and are provided with ears 10, which normally rest upon the edges of the vat 11. The cathodes are shown at 12 and are supported by rods 13, which extend directly across said vat and are supported therefrom.

The apparatus is used as follows: Supposing the operatives desire to raise all of the anodes simultaneously, the frames 6 are rocked asunder, as indicated in Fig. 2, and the shafts 3 are caused to slide longitudinally, so that the hooks 8 pass under and engage the ears 10 of the anodes. The frame 1 now

being raised bodily upward by hand or otherwise, the anodes are of course all lifted to any desired distance. If now it be desired to raise all of the cathodes simultaneously, the anodes are either replaced in the vat or taken off the hooks and the frames 6 are swung inward toward each other, as indicated by dotted lines in Fig. 2. The shafts now being moved bodily endwise, as before, the hooks 8 pass under and engage the rods 13, thereby enabling the frame 1 to raise all of the cathodes.

I am aware that frames have heretofore been used for lifting electrodes. By making the shafts so that they can be shifted bodily endwise, however, I am enabled to make one set of hooks 8 answer for both anodes and cathodes. In other words, I avoid the necessity of having separate sets of hooks for anodes and cathodes. The mere expense of providing a double supply of hooks may not be very great, but the hooks crowd each other and necessitate the apparatus being made unduly heavy and cumbersome, and, moreover, they interfere with each other to some extent in practice. My idea is to have a single set of hooks parallel with each side of the vat and to have the hooks so arranged that they can be readily transposed from anodes to cathodes, and vice versa.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A metallurgical crane, comprising a member to be disposed over a metallurgical bath and adapted to be lifted, a plurality of longitudinal shafts connected with said member and free to shift endwise, and hooks connected with said shafts and adapted to engage electrodes, the arrangement being such that said hooks are free to engage said electrodes when said shaft is shifted endwise.

2. A metallurgical crane, comprising a member disposed over a metallurgical bath and adapted to be lifted, a plurality of shafts journaled to said member and normally free to shift endwise, and L-shaped hooks connected with said shafts, the arrangement being such that said hooks can be brought into engagement with the electrodes by the longitudinal movement of said shafts.

3. A metallurgical crane, comprising a mem-

ber to be lifted, a plurality of longitudinal shafts connected therewith and free to slide endwise and also to rock radially, and hooks connected with said shafts; the arrangement
5 being such that said hooks may be brought into simultaneous engagement with a particular class of electrodes, and then by longitudinal and lateral movements of said shafts, brought into simultaneous engagement with
10 a separate class of said electrodes.

4. A metallurgical crane, comprising a member located over a metallurgical bath and adapted to be lifted, a plurality of longitudinal shafts connected therewith and free to
15 move endwise and also free to rock, a plurality of L-shaped hooks connected with said shafts, the hooks upon either shaft all being disposed in the same plane and having their bills extended in the same direction; the arrangement being such that said hooks can all
20 be rocked simultaneously, and can also be moved simultaneously in the general direction in which the bills extend, for the purpose of engaging electrodes.

25 5. A metallurgical crane, comprising a frame to be located over a metallurgical bath having anodes and cathodes disposed alternately, a plurality of shafts mounted upon said frame, a plurality of hooks connected
30 with said shafts, said hooks being free to rock in planes extending across said bath, and also free to move in the general longitudinal direction of said bath; the arrangement being such that said hooks are free to simul-

35 taneously engage all of said anodes, or to simultaneously engage all of said cathodes, as desired.

6. A metallurgical crane, comprising a frame to be located over a metallurgical bath having anodes and cathodes disposed alternately, a plurality of shafts mounted upon
40 said frame, and a plurality of L-shaped hooks connected with said shaft, all the hooks of each shaft being disposed in the same plane and normally having their bills turned in the same direction, said hooks being free to rock
45 in planes extending across said bath, and also free to travel in the general longitudinal direction of said bath; the arrangement being such that said hooks are free to simultaneously engage all of said anodes, or to simultaneously engage all of said cathodes, as desired.
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7. A metallurgical crane, comprising a member to be disposed over a metallurgical bath
55 and adapted to be lifted, and rows of hooks adapted to engage electrodes, said hooks being free to move in the general direction of said rows and also to move transversely to said rows, whereby to engage electrodes.
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In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID WESLEY BLAIR.

Witnesses:

SIDNEY RIDDLESTORFFER,
PERCY ROTHWELL.