

(No Model.)

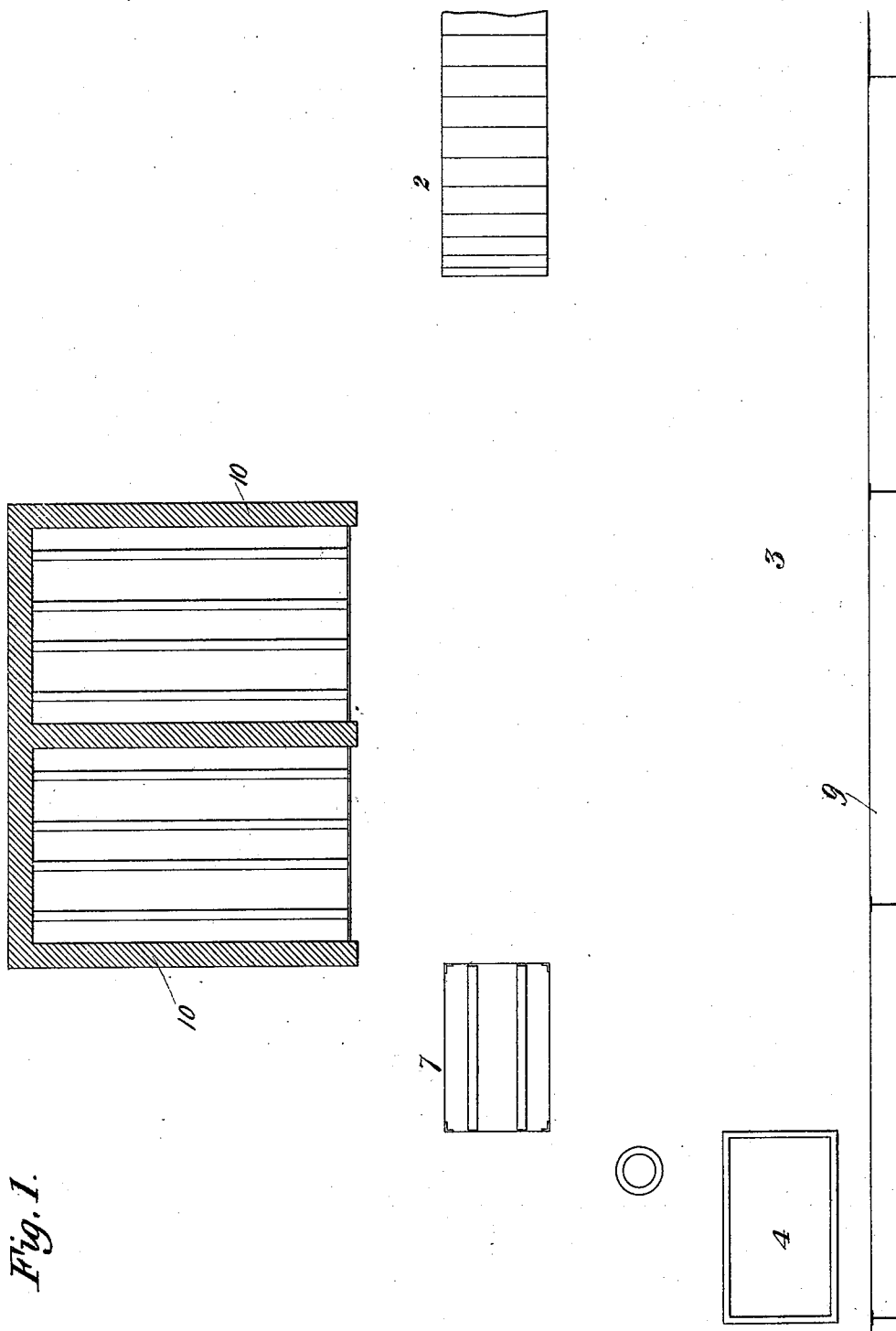
2 Sheets—Sheet 1.

J. NEEDHAM

MANUFACTURE OF WIRE AND WIRE RODS.

No. 510,703.

Patented Dec. 12, 1893.



WITNESSES

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A. M. Corwin

INVENTOR

Joseph Needham
by W. Baxendell & Sons
his Attorneys

(No Model.)

2 Sheets—Sheet 2.

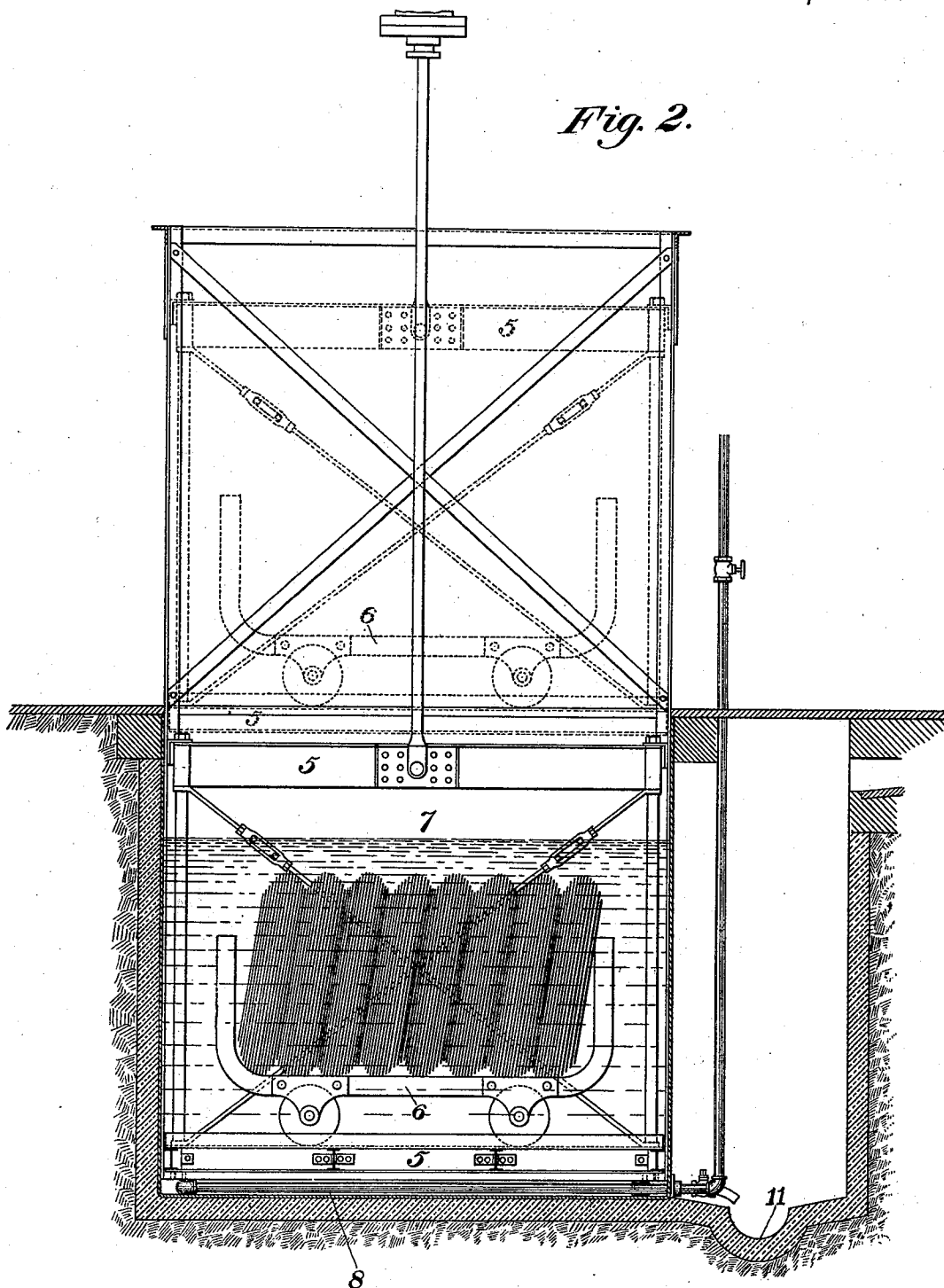
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Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH NEEDHAM, OF BRADDOCK, PENNSYLVANIA.

MANUFACTURE OF WIRE AND WIRE ROD.

SPECIFICATION forming part of Letters Patent No. 510,703, dated December 12, 1893.

Application filed April 28, 1893. Serial No. 472,183. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH NEEDHAM, of Braddock, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Wire and Wire Rods, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my improved plant for preparing wire for drawings; and Fig. 2 is a vertical section of the lime-coating apparatus.

My invention relates to the treatment of wire in preparing the same for drawing, and it consists in an improved method of and plant for such preparation.

In the drawings, Fig. 1, 2 represents the carrier leading from the reels, and 3 the station just inside the wall of the building where the coils are piled up previous to treatment. From this place they are taken upon a reel or yoke to the pickling-vat 4, where they are treated with diluted acid to remove the scale and oxide formed in rolling. This bath is usually warmed, and when the wire rods are taken out and rinsed with cold water, as is ordinarily done, the pores of the metal are closed, and thus considerable acid is retained in the rods. If left in this condition, the rod or wire will rust and become corroded and brittle, and to prevent the action of the residual acid, and to facilitate the drawing operation, it is usual to throw lime water or thin whitewash over the coils after they are washed. This, however, does not completely reach the acid and neutralize the same, and to do this more effectually I proceed as follows:—After the coils are removed from the pickling-vat, they are placed upon a wheeled truck and a stream of water from a hose is turned upon them. After this washing I run the truck 6 upon an elevator 5, and the truck is then lowered into a hot bath of lime-water contained in the bath 7. This thin whitewash is kept hot by a suitable steam coil 8 in the bottom of the vat; and I retain the wire rods in this bath a sufficient length of

time to bring them to a higher temperature 50 than they reached in the acid bath, so as to open the pores of the metal to a greater extent than in the acid bath, thus allowing the lime to reach and neutralize the acid, thereby lessening the time required in the baking-oven and giving a uniform coating to the rods. The condensed steam and water pass from the coil out into a gutter 11, whence they flow away. When the truck is lifted from the vat, it is run upon the floor and allowed to stand a short time while the coils drain somewhat. This draining is much facilitated by the hot lime coating, as the temperature of the bath is nearly at the boiling-point, and the trucks are then run into the baking-ovens 10. 55 60 65

While the truck is in the bath, it is preferably raised and lowered by a hydraulic cylinder, to aid the action of the whitewash and keep the mixture uniform. 70

The advantages of my invention will be apparent to those skilled in the art, since the difficult and disagreeable manual handling of the alkaline solution is done away with, and there is no separate handling of the coils after they are placed upon the truck, as they remain thereon during the whitewash treatment and the baking. The coating of lime is much more uniform and affords a better product, as the drawing of the wire is much facilitated thereby. 75 80

Many changes may be made in the form and arrangement of the parts without departure from my invention as defined in the following claims. 85

I claim—

1. The process of treating wire rods or wire, consisting in pickling the same, washing the pickled coils, immersing the washed coils in a bath of heated lime solution, and then baking them; substantially as described. 90

2. The method of treating wire rods, consisting in pickling and washing the same, piling them upon a truck, immersing the truck and coils in a bath of lime solution, and then moving the truck into a baking-oven; substantially as described. 95

3. The method of treating wire rods, con-

sisting in pickling the same, and then immersing the pickled wire in a bath of heated lime solution, maintaining the rods in the bath until they are brought to a higher temperature than that to which they were exposed in pickling and then baking them; substantially as described.

In testimony whereof I have hereunto set my hand.

JOSEPH NEEDHAM.

Witnesses:

W. B. CORWIN,
H. M. CORWIN.