

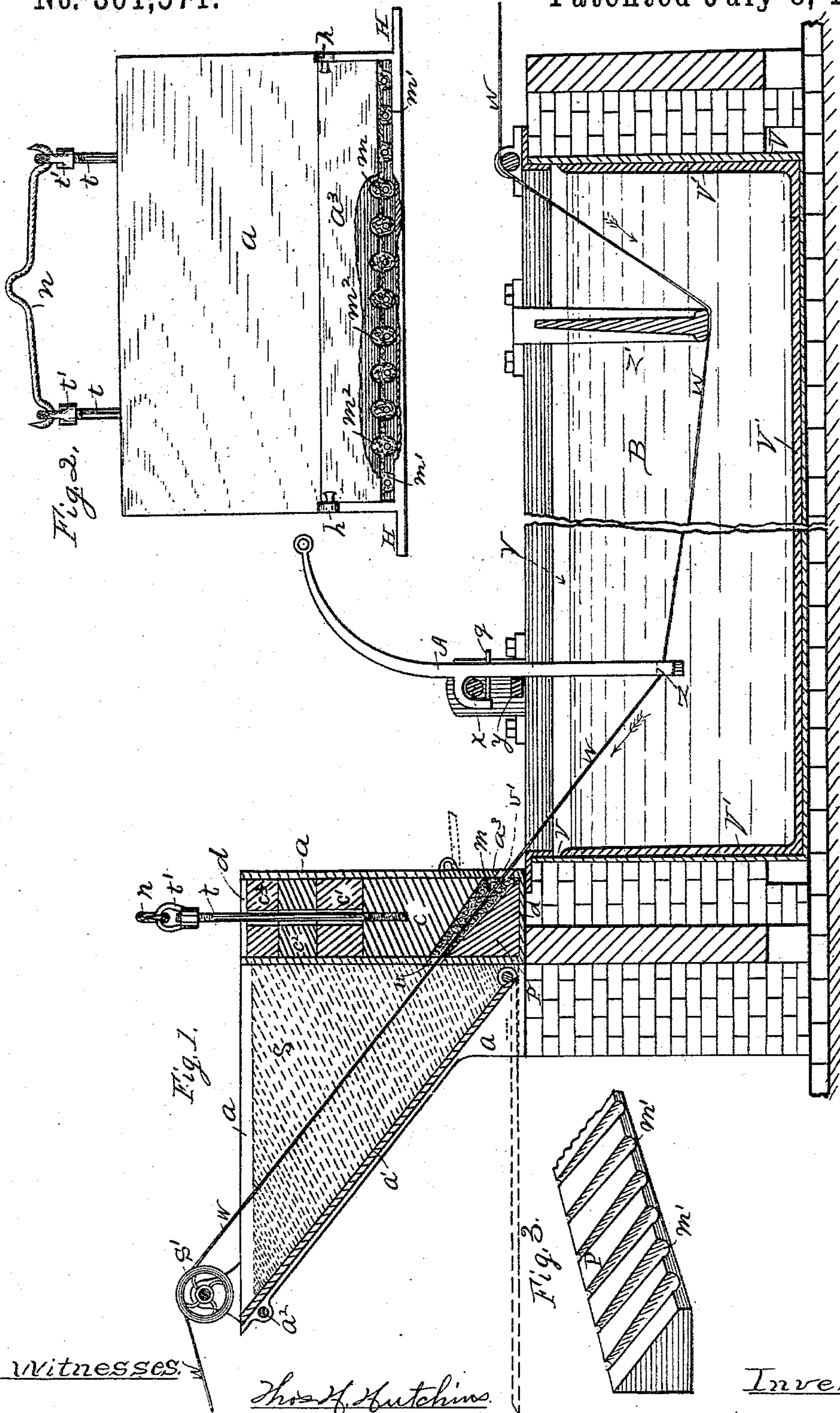
(No Model.)

F. CRICH.

WIRE GALVANIZING APPARATUS.

No. 301,571.

Patented July 8, 1884.



Witnesses:

Thos H. Hutchins.
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UNITED STATES PATENT OFFICE.

FREDERICK CRICH, OF JOLIET, ILLINOIS, ASSIGNOR OF ONE-HALF TO THE
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WIRE-GALVANIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 301,571, dated July 8, 1884.

Application filed December 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK CRICH, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in a Wire-Galvanizing Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a central vertical sectional view; Fig. 2, a front view of the wipe-box, and Fig. 3 a perspective view of the bed P.

This invention relates to certain improvements in a wire-galvanizing apparatus, and pertains to the wiper-box for cleaning and brightening the wire, and certain improvements in the furnace, which improvements I will fully explain in the following specification.

Referring to the drawings, B represents the bath to hold the molten galvanizing material surrounded by the brick furnace for holding the fuel around the bath. The wire *w* to be galvanized passes through the bath B, as shown in Fig. 1, and travels in the direction of the arrow, first passing under the deep sinker *z'*, from thence under the pivoted sinker *z*, of which there is a separate one for each wire. It then passes into the wipe-box *d*, into the funnel-shaped openings *m' m''*, which are filled with some suitable non-combustible material—such as asbestos, or any suitable material for wiping the superfluous galvanizing metal off the wire. These funnel-shaped openings are formed in the face of the bed P, as shown in Fig. 3, and in the lower side of the head *c*—one-half in each, so that when the two close together, as shown in Fig. 2, they form a funnel-shaped hole or opening, having the large end toward the bath B. The small end prevents the filling *m* from being carried through by the wire. The asbestos filling is placed in between the bed P and head *c*, so as not only to fill the funnel-shaped openings or holes *m' m''*, but also between the adjacent parts, as shown in Fig. 2. The bed P and head *c* are placed in the rectangular box or compartment *d*, as shown in Fig. 1, so they may be removed by raising them out vertically with a crane. The sides of the compartment *d* are provided with inlet-holes *v'* for the wire *w* to enter, and exit-holes *v* for

the wire to pass out into the sand S. It is intended to weight the head *c*, so as to apply great pressure on the asbestos or filling between it and the bed P, so as to compress it very compactly, so as to give considerable friction to the wire as it is drawn through. Additional weights, *c' c'' c'''*, are added to give greater pressure to the wiping-filling. The head *c* is provided with a pair of rods, *t t*, which are screw-threaded on their lower end, and screw in said head, and are united at the upper end by a bail, *n*, hooked into the link-nuts *t' t'*, which may be removed to place on the weights *c' c'' c'''*, which are perforated to slide down over said rods *t t*. The bail *n* is used so that a crane may attach thereto and raise all the weights and head *c* out, when desired. The box or compartment *d* is provided with a door, *a''*, hinged at *h h* thereto in front of the funnel-shaped holes *m' m''*, for the purpose of gaining access to clean them out, should they become clogged with superfluous galvanizing metal. The sand S, into which the wire emerges from the wipe-box or wiping material in the box *d*, is for the purpose of brightening and polishing the wire. The sand-box has an inclined bottom hinged at its lower end and adapted to be let down at its upper end, as shown by the dotted lines in Fig. 1, to empty and clean out the sand-box *a*. A rod, *a'*, holds the sand-box together, and, when loosened, will permit the bottom *a'* to fall, as shown. The sinker A is pivoted at about its center on the cross-rod *x*, upon which it partially rotates, so as to elevate or depress its lower end to hold the wire *w* down in the metal, or let it up. Its lower end is provided with a shoe, *z*, in which the wire runs. The pin *g* passes through said sinker under said rod *x*, to prevent the wire *w* from elevating said sinker, and *y* is a rest to hold the sinker and cause it to stand vertically, as shown in Fig. 1. It is intended to have a train of these sinkers—one for each wire—and that each wire shall pass through independently of the other. An eye in the upper end of this sinker A furnishes means for attaching a crane to it to remove it from the bath, when desired. By this process of applying a frictional wiper to the wire, all the superfluous galvanizing metal is thoroughly re-

moved, and also any lumps or inequalities
 smoothed down before the wire enters the sand,
 whose office is simply to brighten and polish
 the wire to a very high degree; also the greater
 5 portion of the superfluous metal wiped off the
 wire by the wiping material in the funnels m'
 m^2 falls back into the bath and is saved, and
 not lost in the sand. In similar apparatus it
 has not been usual to line the vat V with any
 10 non-corrosive or material for resisting the ac-
 tion of the molten galvanizing material. The
 galvanizing material will eat out and finally
 destroy a metal vat. To overcome that objec-
 tion, I line the inner surface of the vat with a
 15 material—such as terra cotta, fire-clay, or any
 analogous substance V' —which will thorough-
 ly resist the action of the molten galvanizing
 material, and thus preserve the vat.

I am aware that a device for this purpose has
 20 been used, wherein the wire has been caused to
 pass through a funnel-shaped aperture out at
 its small end, for the purpose of scraping off
 the superfluous galvanizing metal from the
 wire, by means of its contact with the inner
 25 walls of the funnel, without the use of a com-
 pressed wiping-filling in the funnel, as in this
 invention. Such construction I do not claim.

Having thus described my invention, what I
 claim as new, and desire to secure by Letters
 30 Patent, is as follows, to wit:

1. In the wire-galvanizing apparatus de-
 scribed, the combination of the wipe-box d ,
 head c , and bed P, the head c and bed P hav-
 ing, respectively, the funnel-shaped opposite
 grooves, m' and m^2 , forming the funnel-shaped 35
 aperture described, compressed wiping-filling
 m for the wire w to pass through, and means
 for compressing said filling on said wire, as
 and for the purpose set forth.

2. The combination of the wipe-box d , having 40
 the inlet-holes v' and exit-holes v , and door a' ,
 bed P, having the funnel-shaped grooves m' ,
 head c , having the funnel-shaped grooves m^2 ,
 compressed wiping-filling m , weights c' c^2 c^3 ,
 and means for operating the several parts, as 45
 and for the purpose set forth.

3. In the wire-galvanizing apparatus de-
 scribed, the combination of the wipe-box d , hav-
 ing the inlet-holes v' and exit-holes v , com-
 pressed wiping-filling m for the wire w to be 50
 drawn through, and sand-box a for holding
 sand or any analogous material, all adapted to
 operate as and for the purpose set forth.

FREDERICK CRICH.

Witnesses:

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