N. W. BUCH.

APPARATUS FOR GALVANIZING.

APPLICATION FILED JUNE 28, 1913.

1,141,930.

Patented June 8, 1915.

2 SHEETS—SHEET 1.

Fig. 3.

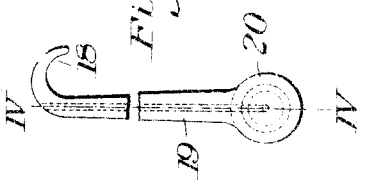


Fig. 4.

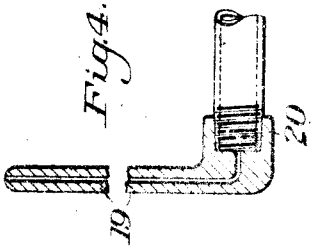
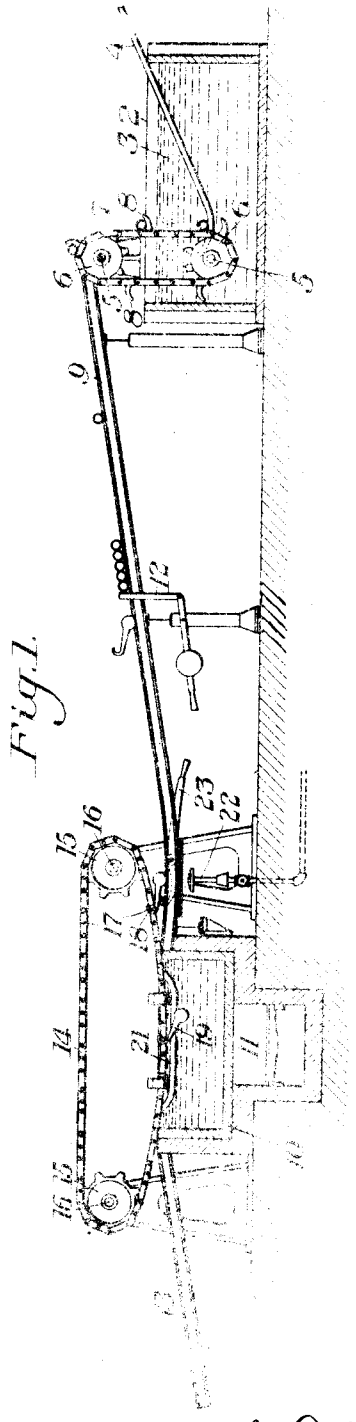


Fig. 1.



WITNESSES

INVENTOR

by Paburnee Peyner Carmelee
Attys

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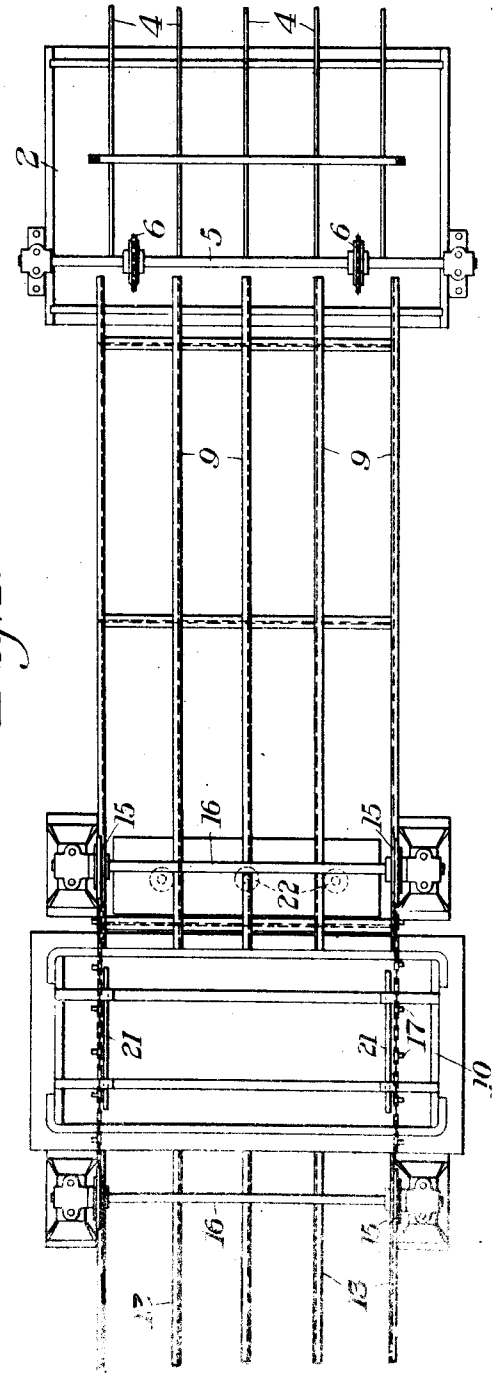


Fig. 2.

WITNESSES

Jesse B Heller

INVENTOR

W. Buch

by Dabney Byrnes Carrington & Lee Attys

UNITED STATES PATENT OFFICE.

NEWTON W. BUCH, OF NEW CASTLE, PENNSYLVANIA, ASSIGNOR TO SAFETY ARMORITE CONDUIT COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

APPARATUS FOR GALVANIZING.

1,141,930. Specification of Letters Patent. Patented June 8, 1915.

Application filed June 28, 1913. Serial No. 776,430.

To all whom it may concern:

Be it known that I, NEWTON W. BUCH, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented a new useful Apparatus for Galvanizing, 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 longitudinal section through one form of apparatus for galvanizing. Fig. 2 is a plan view. Fig. 3 is an end view of one of the pipe supporting members on a larger scale, and Fig. 4 is a sectional view on the line IV—IV of Fig. 3.

My invention relates to the galvanizing of pipes, bars, etc., and the apparatus is designed to continuously carry out a method of novel character by means of which the work of galvanizing may be rapidly and thoroughly performed.

The precise nature of my invention will be best understood by reference to the accompanying drawings, which will now be described, it being premised, however, that various changes may be made without departing from the spirit and scope of my invention, as defined in the appended claims.

In the drawings, the numeral 2 designates a tank for containing the acid bath 3.

4 designates a skid leading into the bath on which the pipes to be galvanized are fed in any desired manner. Rotatably mounted in the bearings connected to the tank 2 are shafts 5—5 having connected thereto sprocket wheels 6 for an endless conveyer 7. This endless conveyer is provided with hooks 8 which are arranged to lift the pipes or rods from the skid 4 and convey them to an inclined skid 9. This skid 9 extends from the acid tank 2 to a point adjacent to a hot metal tank 10, having a furnace 11 for keeping the metal in a molten condition. 12 is a stop on the skid 9 which is arranged to prevent the pipes or rods rolling down the skid to the hot metal tank 5.

Extending beyond the hot metal tank 10 is a third skid 13, over which the pipes are moved after they have been galvanized, and 14 is an endless conveyer above the hot metal tank 10 which is arranged to draw the pipes or rods through the molten metal tank. This endless conveyer is mounted on sprocket wheels 15 connected to shafts 16 which may be rotated in any desired manner, and extending outwardly from both of the chains of the conveyer are projections 17 for engaging the hooked portions 18 on pipe supporting members 19. These pipe supporting members are provided with laterally extending bosses 20 which are screw threaded to receive the ends of the pipes or rods, and are each provided with an opening extending from the upper end thereof into the tapped recess. Mounted within the hot metal tank 10 are guides 21.

The pipes or rods are fed into the tank 2 over the skid 4 in which they are treated by means of the acid to remove grease, etc., in order to prepare them for the galvanizing bath. The pipes are conveyed successively from the tank 2 to the skid 9 and pass by gravity down the skid 9 to the stop 12. The pipes are then moved successively beyond the stop 12 and a supporting member 19 is connected to each end thereof. It is then passed to a point above a plurality of burners or hot plates 22, which are arranged to heat the pipe to drive off some of the moisture from the acid bath. The supporting members 19 are then elevated at their outer ends by means of a lever such as shown at 23 so that the hooked members thereof will be engaged by the projections 17 on the conveyer 14. The forward movement of the conveyer will carry the pipe into the hot bath in the tank 10 and the guides 21 will hold the pipe down below the upper surface of the molten metal. During the passage of the pipe through the molten metal, the outer surface thereof will be galvanized and any vapor caused by the moisture within the pipe will pass out through the openings in the connecting members. After the pipe has been drawn through the hot metal bath it will be raised onto the skid 13 and disconnected from the supporting members and the conveyer.

The advantages of my invention will be apparent to those skilled in the art, since it provides an extremely efficient and rapid method of galvanizing pipe. The apparatus also overcomes the difficulties which have heretofore been experienced due to the rapid vaporization within the pipe of any moisture such as remains from the acid bath, as the vapor can pass off through the openings in the supporting members.

A further advantage consists in the fact

that the threaded ends of the pipe are protected against being coated and that no galvanizing material can enter the interior of the pipes during the galvanizing operation.

It will be seen that the supporting members 19 perform four distinct functions as follows: First, they act as supporting members; second, they act to close the ends of the pipes against the entrance of any galvanizing or coating material to the interiors thereof; third, they protect the threads of the pipe from becoming coated or clogged with the galvanizing material; and fourth, they form venting means for the interior of the pipe.

While I have shown my invention as being carried out in connection with hot galvanizing, it will be readily understood that my improved method is also applicable to electro galvanizing, the pipes being supported and moved through the electrolyte in a manner similar to that of hot galvanizing.

The novel method herein described forms the subject matter of my divisional application Serial No. 867,577, filed Oct. 20, 1914.

I claim:—

1. Apparatus for hot galvanizing, comprising a tank for containing the galvanizing material, a conveyer arranged over said tank, and supporting devices adapted to detachably engage the conveyer and also to engage the pipes to suspend them within the galvanizing material within the tank, said supporting devices having means for closing the ends of the pipe against the entrance of the galvanizing material into the interior of the pipe, substantially as described.

2. Apparatus for hot galvanizing, comprising a tank for containing the molten galvanizing material, a conveyer passing over said tank, supporting members having vented socket portions for engaging the ends of the pipe and also having means for detachably connecting them to the conveyer, and means for holding the pipe down in the molten metal as it is moved along by the conveyer while suspended by said supporting members, substantially as described.

3. Apparatus for hot galvanizing, comprising a tank containing a molten galvanizing metal, an endless conveyer mounted over said tank, and supporting members having sockets adapted to engage and close the ends of the pipes to be galvanized and also having means for connecting them to said conveyer, substantially as described.

4. Apparatus for hot galvanizing, comprising a tank for containing the molten metal, a conveyer arranged over said tank, and supporting members having sockets to receive and close the ends of the pipes to be galvanized and also having vent openings extending therethrough and upwardly to points which will be above the level of the molten metal in said tank, together with means for connecting them to the conveyer, substantially as described.

In testimony whereof, I have hereunto set my hand.

NEWTON W. BUCH.

Witnesses:
GEORGE S. LONG,
SCOTT D. LONG.