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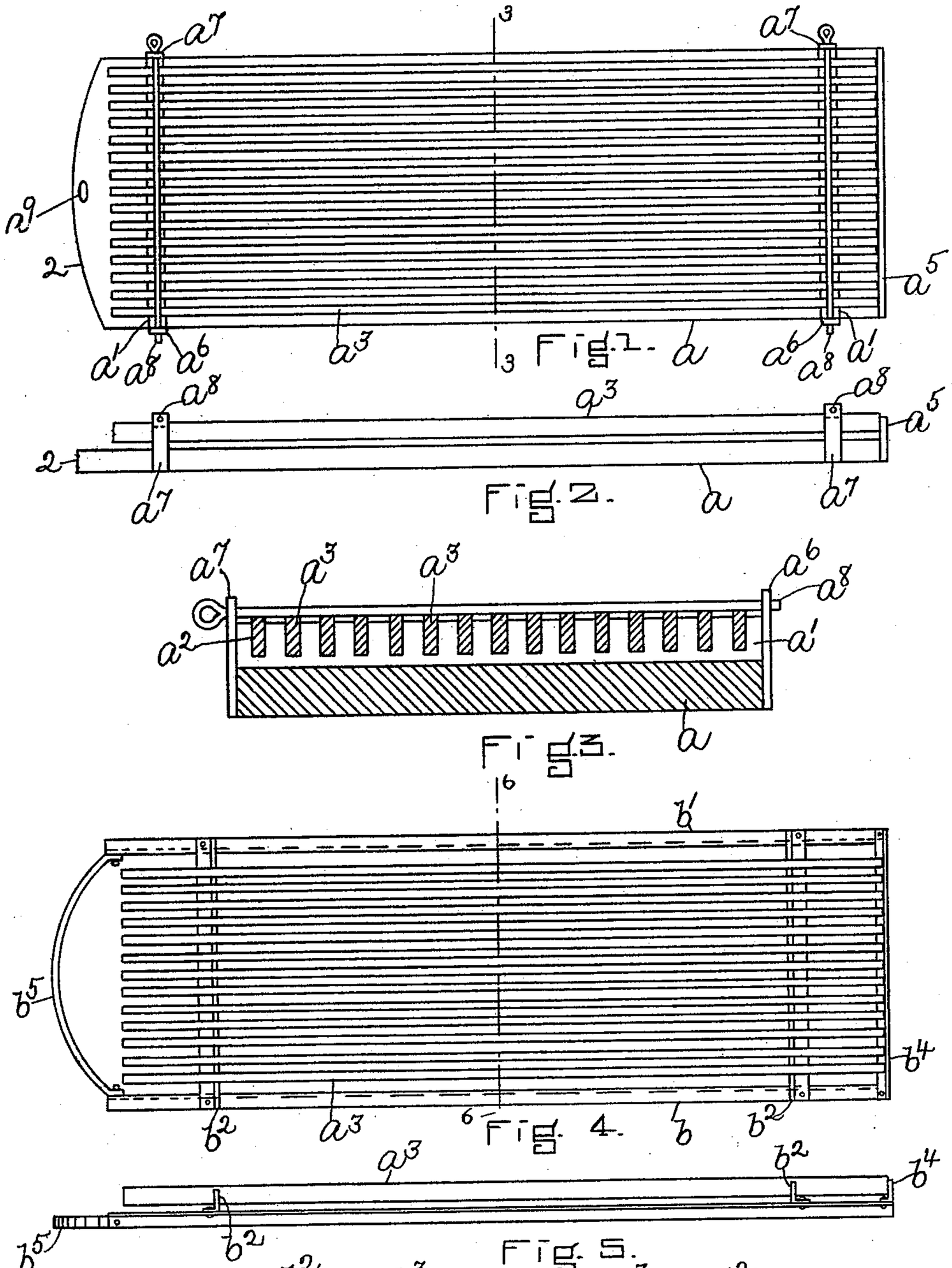
E. I. BRADDOCK.

SUPPORTING APPARATUS FOR PIECES OR LENGTHS OF METAL.

(Application filed Nov. 19, 1896.)

(No Model.)



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SUPPORTING APPARATUS FOR PIECES OR LENGTHS OF METAL.

SPECIFICATION forming part of Letters Patent No. 640,086, dated December 26, 1899.

Application filed November 19, 1896. Serial No. 612,694. (No model.)

To all whom it may concern:

Be it known that I, EDWARD I. BRADDOCK, residing in Medford, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Supporting Apparatus for Pieces or Lengths of Metal, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a supporting apparatus for use in galvanizing pieces or lengths of metal—such as strips of hoop-iron, sections of metal pipe, &c.—whereby the latter may be more quickly and uniformly galvanized with a very material saving in the cost of galvanizing the same. As now commonly practiced and known to me hoop-iron has been heretofore galvanized in bulk—that is, a bundle composed of a plurality of pieces of hoop-iron has been pickled and subsequently placed in the galvanizing-vat, and after remaining in the galvanizing-vat a sufficient length of time the said galvanized pieces are removed one by one, which is a slow and thereby expensive process and is objectionable on account of the non-uniform galvanizing of the pieces, owing to the liability of the piece removed from the galvanizing bath or vat rubbing against the other pieces in said vat.

This invention has for its object to provide a supporting apparatus for the pieces of hoop-iron to be galvanized, on which the individual pieces are kept separated, so as to enable the pickling solution to act on all parts of each individual piece of hoop, and which is provided with a locking device for the pieces of hoop-iron on the supporting apparatus, and preferably also with a rest or stop against which one end of the said pieces may abut when the apparatus is lifted out of the pickling-vat. Owing to the nature of the pickling solution, the supporting apparatus when used for purpose of pickling is preferably made of wood or other material not destructively acted upon by the pickling solution; but when the apparatus is used for galvanizing purposes I prefer to make the same of metal, such as iron or steel, and the supporting apparatus used in this galvanizing-vat need not be provided with the locking device, as will be described.

In accordance with this invention the supporting apparatus consists, essentially, of a base of the desired width and length and one or more rack-bars, preferably two, which are located near the opposite ends of said base and are provided with slots or openings for the reception of the individual pieces of the hoop-iron, the said base being also preferably provided with a foot piece or rest, against which the ends of the pieces of hoop-iron abut when the apparatus is lifted from the vat. The pickling apparatus is provided with a locking device for the pieces of hoop-iron capable of being withdrawn bodily from over the said pieces, and the said locking device may be suitable pins or bars extended across the upper edges of the pieces of hoop-iron to hold them in their slots in the racks, and thereby permit the supporting apparatus to be inverted in order to quickly transfer the pieces of hoop-iron from one supporting apparatus to another.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a plan view of a supporting apparatus embodying this invention; Fig. 2, a side elevation of the apparatus shown in Fig. 1; Fig. 3, a transverse section, on an enlarged scale, of the apparatus shown in Fig. 1 looking toward the left; Fig. 4, a plan view of a modified form of apparatus; Fig. 5, a side elevation of the apparatus shown in Fig. 4, and Fig. 6 a transverse section of the apparatus shown in Fig. 4 on the line 6 6.

The supporting apparatus herein shown as embodying this invention comprises a base a, which, as represented in Figs. 1 to 3, inclusive, is made of a single piece of wood or other like material not injuriously acted upon by acids or pickling solutions, and one or more transverse racks or slotted bars a', herein shown as two in number and located near the opposite ends of the base a, the said rack-bars, as represented in Figs. 1 to 3, inclusive, comprising a single piece or board provided with vertical slots a^2 of a width substantially equal to or slightly larger than the width of the pieces a^3 of hoop iron when placed therein edgewise.

The transverse rack-bars a' may be doweled or othewise suitably secured to the base a, and the slots a^2 in the said rack-bars are suitably spaced to prevent contact of the individual pieces of hoop-iron placed in them. The base a is preferably provided at one end, as herein shown, with an upright foot-piece a^5, which projects above the upper surface of the said base a sufficient distance to constitute a rest or abutment for one end of the pieces a^3 of hoop-iron when the base a is inclined, with the foot-piece a^5 lowered. As represented in Figs. 1 to 3, inclusive, the base a has secured to its opposite sides, substantially in line with the rack-bars a', uprights a^6 a^7, having suitable holes in them, through which extends a locking device, shown as a pin, rod, or bar a^8, which, as represented in Figs. 1 and 3, extends across the upper edges of the pieces a^3 of hoop-iron, and thereby locks the said pieces in their slots, so that the base a, with the pieces of hoop-iron supported thereon, may be inverted for a purpose, as will be described. In the present instance the base a is represented as provided at one end, which may be designated the "head," with a suitable hole a^9 for the reception of a lifting-hook or other device.

In the process of galvanizing hoop-iron the pieces of hoop-iron are first pickled by immersing them in a vat containing a suitable cleansing or pickling agent, usually a dilute solution of sulfuric acid, and in accordance with this invention the pieces a^3 of hoop-iron are first placed in the slots a^2 of the rack-bars a' and then locked or secured in their slots by the locking pins or devices a^8, and when thus secured to the supporting apparatus the latter is in condition to be immersed in the pickling solution, which is usually effected by the operator lowering the base with the foot-rest end at a lower angle than the head, so that the pieces a^3 of hoop-iron will not become displaced from the supporting apparatus. After the pieces of hoop-iron have been sufficiently pickled the apparatus is removed from the pickling-vat, and the pieces of hoop-iron may be transferred to a like apparatus by inverting the supporting apparatus (shown in Figs. 1 to 3, inclusive) and placing the same above the supporting apparatus to be used in the galvanizing process.

The rack-bars of the supporting apparatus used in the pickling-vat may, and preferably will be, made of wood, as the latter is practically unaffected by the pickling solution.

To effect the transfer of the metal pieces from the pickling supporting apparatus to the galvanizing supporting apparatus, the pickling apparatus is inverted, with the pieces a^3 of hoop-iron retained in the slots of the rack-bars by the pins a^8, and the slots in the rack-bars a' of the pickling apparatus are in line with the slots a' in the rack-bars of the galvanizing supporting apparatus, such as shown in Figs. 4 to 6, inclusive. The rack-bars of the galvanizing apparatus are preferably located on their supporting-base, so as not to be in line with the rack-bars of the pickling apparatus, and as a result the inverted pickling apparatus is placed over the galvanizing apparatus, with the pieces of hoop-iron entered into the slots in the rack-bars of the galvanizing apparatus before the pins a^8 are withdrawn, and when so entered the said pins are withdrawn to release the pieces of hoop-iron from the pickling supporting apparatus.

The galvanizing supporting apparatus may, and preferably will, be made of metal after the manner shown in Figs. 4 to 6, inclusive. As represented in Figs. 4 to 6, inclusive, the base portion of the supporting apparatus is composed of two angle-iron side pieces b b', having riveted or otherwise secured to them cross-pieces b^2 of angle-iron, provided with slots b^3, corresponding to the slots a^2, (shown in Fig. 3,) the angle-iron side pieces b b' having also secured to them at one end an angle-iron piece b^4, constituting a foot-rest similar to a^5. (Shown in Figs. 1 to 3.) To facilitate handling of the metallic supporting apparatus, the angle-iron side pieces b b' may have secured to them at what may be termed the "head" portion a bail b^5. The supporting apparatus when made of metal, as represented in Figs. 4 to 6, is designed to be immersed in the galvanizing-vat, and inasmuch as this is the last step of the galvanizing process and the metallic supporting apparatus is not required to be inverted for transfer to a further apparatus of like construction the locking device used in connection with the pickling apparatus may be omitted from the supporting apparatus used in the galvanizing-vat.

By means of the apparatus herein described it will readily be seen that the process of galvanizing hoop-iron is materially hastened on account of the saving in time required in handling the pieces of hoop-iron, especially in the galvanizing-vat, and by reason of the pieces of hoop-iron carried by the supporting apparatus being separated from each other all danger of the pieces rubbing against each other when removed from the galvanizing-vat is avoided and a more uniform galvanizing of the hoop-iron is effected.

I have herein shown the supporting apparatus as provided with two rack-bars located substantially near the opposite ends of the supporting-base; but while I may prefer this construction I do not desire to limit my invention in this respect, as an efficient supporting apparatus might be made with a single rack-bar located near the center of the same.

I have herein described my invention particularly with relation to hoop-iron; but I do not desire to limit my invention in this respect, as it is equally well adapted for use with sections of pipes, rods, &c.

I claim—

1. A supporting apparatus for pieces or lengths of metal consisting of a supporting-base provided with a transverse bar having

slots for the reception of the pieces of metal, a foot rest or piece at one end of the said supporting-base against which the ends of the pieces of metal are adapted to rest when the supporting apparatus is inclined, and a locking device coöperating with the transverse bar and withdrawable longitudinally to permit the pieces of metal to be transferred from one apparatus to a similar apparatus upon which it is placed in an inverted position, substantially as described.

2. A supporting apparatus for pieces or lengths of metal consisting of a supporting-base provided with transverse bars having slots or openings through which the pieces of metal may extend, a foot rest or piece at one end of the supporting-base against which the ends of the pieces of metal are adapted to rest when the supporting apparatus is inclined, and a plurality of locking devices for the pieces of metal coöperating with the transverse bars and withdrawable longitudinally to permit the metal pieces to be transferred to a similar apparatus, substantially as and for the purpose specified.

3. A supporting apparatus for pieces of hoop-iron consisting of a supporting-base provided at or near its opposite ends with transverse bars having slots for the reception of the pieces of metal and separated from each other a distance sufficient to prevent the ends of the pieces from coming in contact, and an upright or rest secured to the said supporting-base and against which the pieces of hoop-iron are adapted to abut when the supporting-base is inclined, and locking devices cooperating with said transverse bars and extended the length of the same and across the slots in said bars to form a support for said strips when the apparatus is inverted, said locking devices being withdrawable in the direction of their length, for the purpose specified.

4. A supporting apparatus for pieces or lengths of metal consisting of a supporting-base provided with a transverse bar having slots or openings for the reception of the pieces of metal, and a locking device coöperating with said transverse bar to lock or retain said pieces in their slots and withdrawable longitudinally to permit the metal pieces to be transferred into the slots of the transverse bar of a similar apparatus when the supporting apparatus is inverted, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD I. BRADDOCK.

Witnesses:

JAS. H. CHURCHILL,

J. MURPHY.