J. B. FISCHER.

METHOD OF STRAIGHTENING TUBES AND RODS.

APPLICATION FILED APR. 22, 1910.

981,407. Patented Jan. 10, 1911.

Fig. 1.

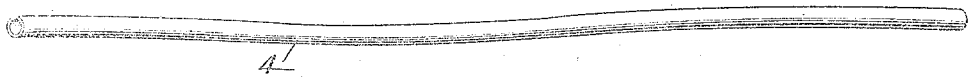


Fig. 2.

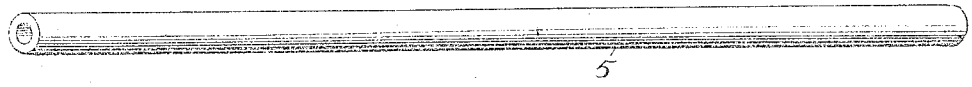


Fig. 3.

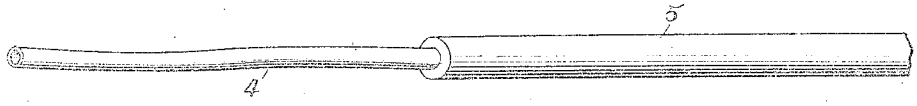
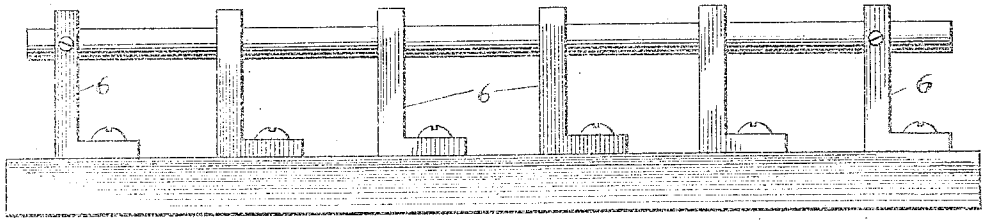


Fig. 4.



Witnesses:

C. F. Barrett

M. A. Milord

Inventor

Joseph B. Fischer

By Frederick Steyaert

Atty.

UNITED STATES PATENT OFFICE.

JOSEPH B. FISCHER, OF CHICAGO, ILLINOIS.

METHOD OF STRAIGHTENING TUBES AND RODS.

981,407. Specification of Letters Patent. Patented Jan. 10, 1911.

Application filed April 22, 1910. Serial No. 556,957.

To all whom it may concern:

Be it known that I, JOSEPH B. FISCHER, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Straightening Tubes and Rods, of which the following is a specification.

This invention relates to improvements in methods of straightening bent or distorted metal tubes or rods, and especially those that lose their shape as a result of hardening.

In the manufacture of light steel tubing it has been found that the tubes after leaving the hardening bath will be twisted, curved, bent or distorted to such an extent that for many purposes they are now unusable until restored to their true straight shape. The work of straightening these distorted tubes as ordinarily practiced is slow, laborious, and expensive. By my improved method I restore tubes or rods to their normal shape quickly, cheaply and effectually as will fully appear from the following detailed description.

In the accompanying drawing I have illustrated a tube in its distorted form and shown the relative arrangement of such tube and its straightener tube.

In the following views—Figure 1 shows a distorted tube as it appears after the hardening bath; Fig. 2 shows the straightener tube, and Fig. 3 shows the relative arrangement of the distorted and the straightener tube when the former is being inserted in the latter; Fig. 4 is a side elevation of a tube carrying frame.

Referring to the drawing in detail, 4 represents a section of thin metal tubing which has become distorted as a result of its hardening bath and subsequent cooling.

5 represents a section of straight tubing of heavier gage than the section 4, and with its inner cross-diameter slightly greater than the external cross diameter of the tube section 4 so that there will be a tight sliding fit between the two sections.

To straighten the tube 4, I push it into the tube 5 until all of the distorted portion of the former is surrounded by the latter, and in this position, I place both tubes in an oven having a temperature of about 500 or more degrees Fahr. and leave them there until heated through, when they are withdrawn and allowed to cool, and when cooled the inner tube will be straight and true and will have its proper temper.

Where a number of tubes are to be straightened they may be placed in a suitable frame 6 having registering holes to receive the outer tubes so that the hot air may freely circulate around the tubes and they may be conveniently handled in bulk.

It will be apparent that distorted rods may be straightened in the manner described, it being necessary only to prolong the period of exposure to the hot air of the oven.

Having thus described my invention what I claim as new, is:—

1. A method of straightening a distorted tube which consists in inserting such tube in a straight tube having thicker walls than the inserted tube, and fitting tightly around the latter, and then subjecting the tubes so arranged to a temperature which will be sufficient to straighten the inner tube without drawing its temper beyond the temper desired.

2. A method of straightening a tube distorted as a result of hardening, which consists in inserting such tube in a straight tube having substantially thicker walls than the inserted tube, and fitting tightly around the latter, and then subjecting the assembled tubes to a temperature of about 500 or more degrees Fahr. as may be required.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH B. FISCHER.

Witnesses:
AREND VISSCHER,
RUTH L. VOORHORST.