(No Model.)

S. P. M. TASKER & W. F. WOLFKIEL.

APPARATUS FOR TRUING, REDUCING, AND STRAIGHTENING METALLIC TUBES.

No. 267,614. Patented Nov. 14, 1882.

Fig. 2.

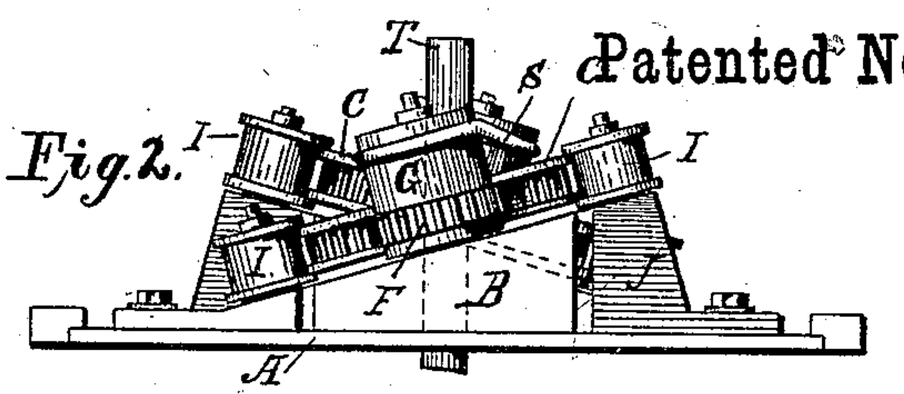


Fig. 1.

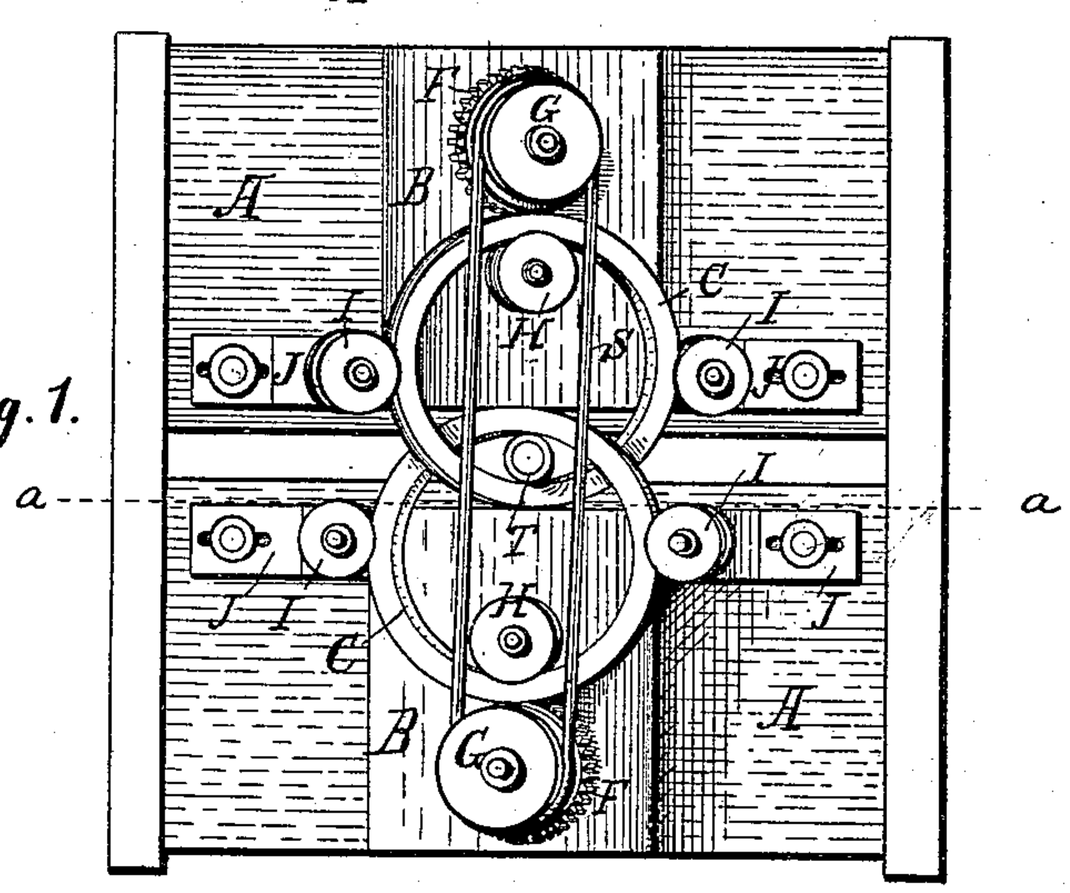


Fig. 3.

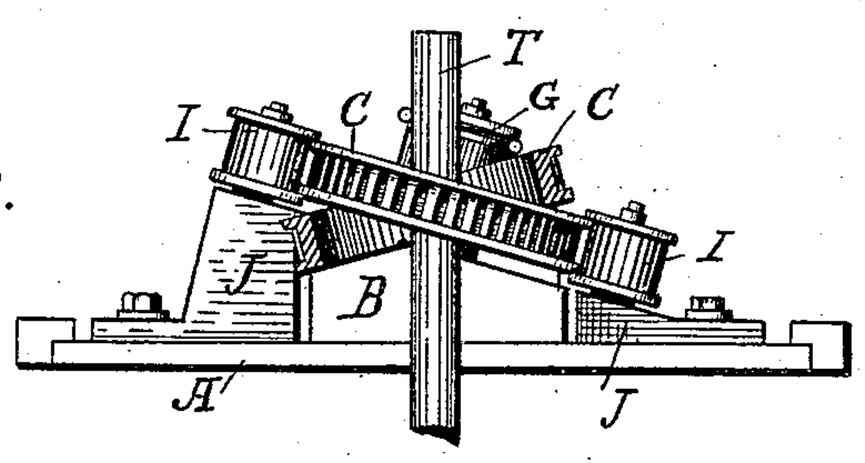
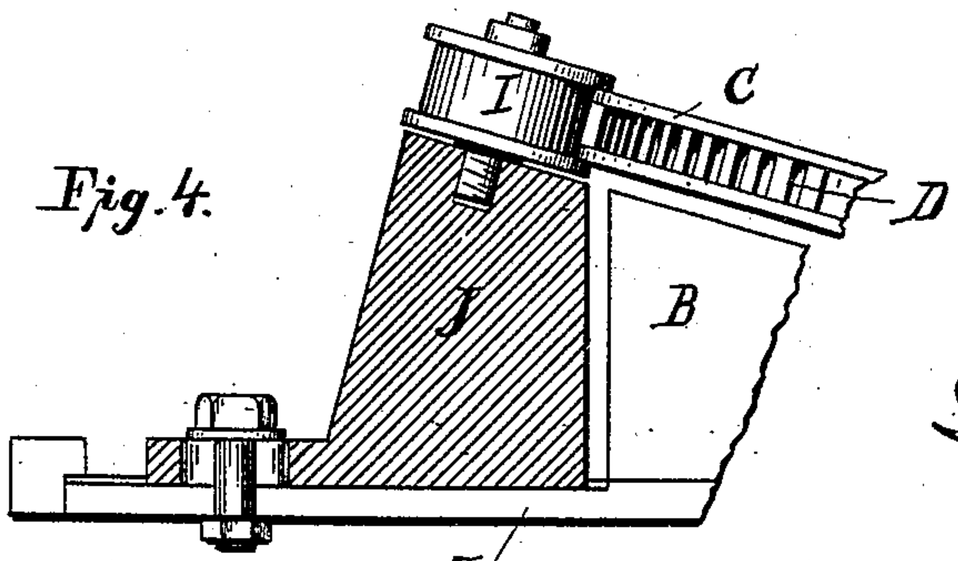


Fig. 4.



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UNITED STATES PATENT OFFICE.

STEPHEN P. M. TASKER, OF PHILADELPHIA, PENNSYLVANIA, AND WALTER F. WOLFKIEL, OF NEW CASTLE, DELAWARE.

APPARATUS FOR TRUING, REDUCING, AND STRAIGHTENING METALLIC TUBES.

SPECIFICATION forming part of Letters Patent No. 267,614, dated November 14, 1882.

Application filed June 10, 1882. (No model.)

To all whom it may concern:

Be it known that we, STEPHEN P. M. TASKER, of Philadelphia, Pennsylvania, and WALTER F. WOLFKIEL, of New Castle, Delaware, have jointly invented an Improved Apparatus for Truing, Reducing, and Straightening Metallic Tubes, of which the following is a specification.

Our invention comprises a specially-constructed apparatus employed for the purpose of truing, rounding up, and removing irregularities from the exterior surfaces of gas and other metallic tubing, solid metallic rods, and kindred articles. After its passage from the rolls or drawing-dies, certain irregularities remain upon the surfaces of tubing, and kindred articles, which impair its circular sectional outline and its merchantable qualities.

Our invention aims to remove all of the above imperfections and to give a true and smooth surface to the tube, while incidentally straightening it in the direction of its length and reducing it, to which end it consists in the apparatus hereinafter set forth and claimed.

The accompanying drawings represent a convenient embodiment of a preferred construction of our apparatus.

In said drawings, Figure 1 is a top plan view of an apparatus conveniently embodying our invention. Fig. 2 is a vertical end elevation of the same, viewed from the lower portion of the apparatus of Fig. 1, looking toward its upper portion. Fig. 3 is a vertical sectional elevation of the same apparatus, viewed from a similar point of view to that from which Fig. 2 is viewed, section being supposed on the line *a a* of said Fig. 1. Fig. 4 is a vertical sectional elevational detail of one of the adjustable pillow-blocks which support the ring-adjusting idler-pulleys.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents a foundation bed-plate or platform, upon which the operative parts of the apparatus are erected.

B are two oppositely-inclined platforms or inclined supporting-surfaces, of any suitable construction, which support in a predetermined position and relation the truing and straightening rings C and sundry members of the driving, sustaining, and adjusting devices of the latter.

C, as stated, are the "truing and straightening rings," as we term them, being two metallic annuli, of suitable size, slightly bellied or curved outward as to their interior walls for a purpose hereinafter explained, and upon their exterior faces provided with teeth D, formed in the manner of shrouded gearing—that is to say, protected by flange coming out even with the exterior face of each ring, so that the interdental spaces are in effect mortises in the exterior face of said ring. The rings are set in oppositely-inclined planes, and are interlocked, as represented in Fig. 1, so that in their interlocked positions they respectively occupy planes corresponding with the planes of the inclined platforms upon which they are respectively disposed. The rings are adapted to be positively revolved in opposite directions, preferably by means of suitable driving-pinions F, which mesh with the teeth formed upon their peripheries and serve to impart the driving motion. The pinions are equipped with band-wheels G, which carry a band or driving-belt, S, adapted to connect one pinion with the other and insure that an equal motion is imparted to both.

In lieu of a belt and band-wheels, sprocket-wheels and a sprocket-chain may be employed, or other suitable connection between the pinions effected.

H are two setting-pulleys, placed one on each platform in line in front of the driving-pinions within the rings and against their inner faces. They are supported from the platforms free to revolve about fixed shafts, and, in connection with the driving-pinions, grip the straightening-rings and retain them lengthwise in fixed position.

I are idler-pulleys erected upon pillow-blocks J, made adjustable sidewise, and supported from the bed-plate on both sides of the inclined platforms. These idler-pulleys run against and embrace the shrouds on the exterior of the rings and sustain the straightening-rings sidewise, and, by their set a little off the center and opposite to the setting-pulleys, lengthwise also,

in position, and enable a very accurate adjustment or set to the same. Each pair of idlers, taken in connection with one of the fixed setting-pulleys, secures the accurate retention of one of the straightening-rings in proper position for its operation. The rings, as will be understood, derive their whole support from the idler and setting pulleys and the pinions.

Such being a description of a convenient embodiment of our apparatus, by reference to the drawings it will now be understood that an elliptic space is formed between the rings in the region of their interlocked portions, said space being that into which the tube T to be trued, reduced, and straightened is to be introduced. The side boundaries of the space formed by the inner walls of the interlocked rings, by virtue of the curvature or belly of the faces of the inner walls of said rings, calculated in connection with the opposite inclinations at which the rings are disposed, are continuously-occurring straight lines, which, in the revolution of the rings, serve to compress or reduce the tube and level or express all irregularities from its surface without cutting into it or shearing off any portion thereof, as would result were the rings not bellied as described. Motion being suitably imparted to one of the driving-pinions, the straightening-rings are steadily revolved in opposite directions against their setting and idler pulleys, the one ring within the other. When, now, a tube to be straightened is introduced into the space between the rings the operation of the inner opposite faces of said interlocked rings upon the exterior of the tube is such as to cause the tube to be carried along between them, and subjected to such compressing and truing-off or surfacing action by their parallel inner faces as will occasion not only the reducing and surfacing, but also the straightening of the tube itself.

As will be observed, the apparatus is adapted for the straightening of tubes of any desired length, as it can be placed in any such position as will permit of the introduction of the tube at its one side and of the passage thereof out on the other.

When it is desired to adjust the apparatus for operating upon tubes of different sizes the various ring adjusting and retaining devices can be arranged to approach or recede lengthwise, each set from the other, and so regulate the breadth of the space between the opposite inner walls of the rings.

The gist of our construction resides in the interlocked rings, and any mechanic will understand that technical changes in the devices for securing the set of and imparting motion to said rings can be made, which, while varying the exact construction set forth herein, will not alter the real invention.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. As a composite device for truing, reducing, and straightening tubes, two rings interlocked, caused to revolve in opposite directions, and adapted to act as to their inner opposite interlocked faces upon said tubes.

2. In an apparatus for truing, reducing, and straightening tubes, the combination of two interlocked rings, idler-pulleys or kindred devices adapted to sustain and ease the revolution of the rings in their interlocked position, and mechanism for imparting an opposite revolution to each ring.

3. The combination, to form an apparatus for truing, reducing, and straightening tubes, of two rings interlocked and set in oppositely-inclined planes, oppositely-inclined setting and idler pulleys or kindred ring-sustaining devices, and mechanism adapted to drive the rings in their oppositely-inclined positions.

In testimony whereof we have hereunto signed our names this 9th day of June, A. D. 1882.

STEPHEN P. M. TASKER.
WALTER F. WOLFKIEL.

In presence of—
J. BONSALL TAYLOR,
W. C. STRAWBRIDGE.