(No Model.)

H. F. BUSKING.

SHAFT STRAIGHTENER.

No. 485,735. Patented Nov. 8, 1892.

Fig. 1.

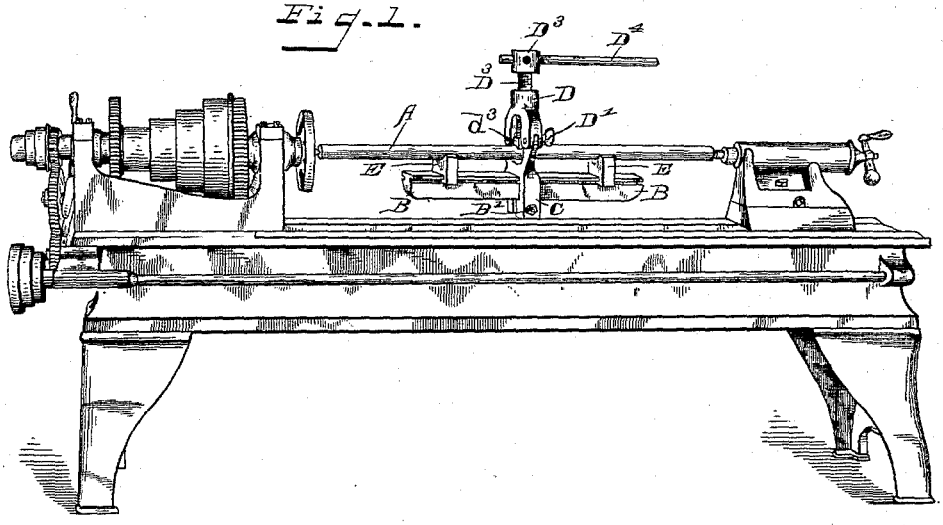


Fig. 2.

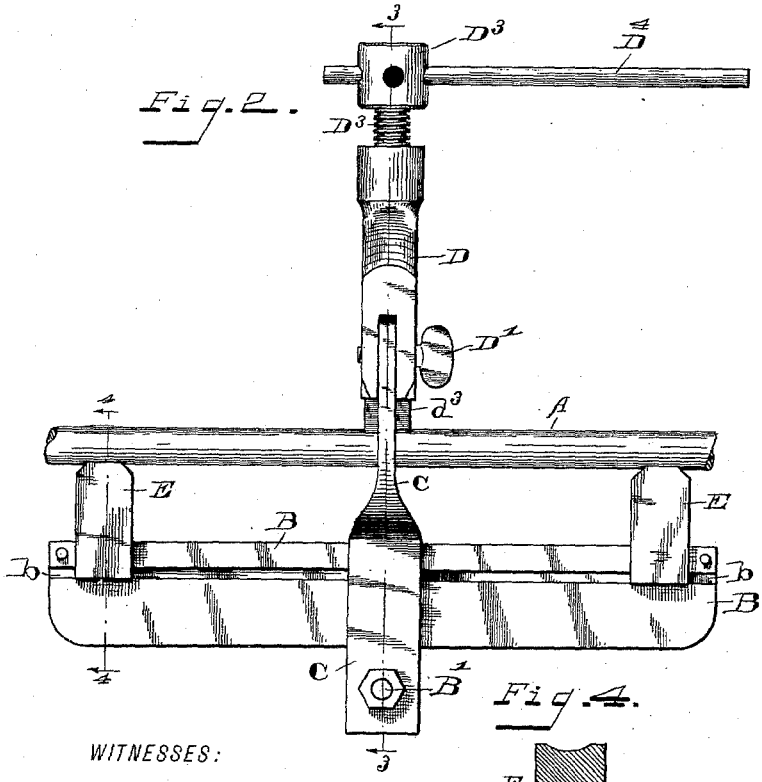


Fig. 3.

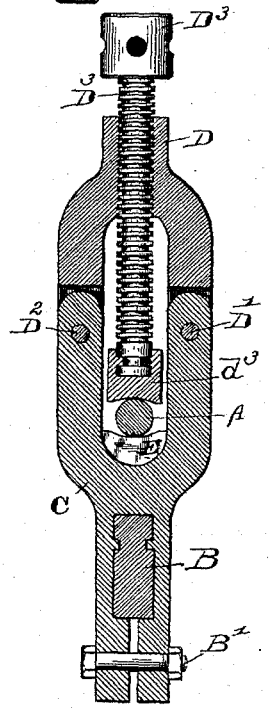
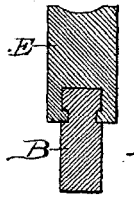


Fig. 4.



WITNESSES:

F. W. Karner

J. A. Walsh.

INVENTOR

Henry F. Busking,

per. C. T. & W. Bradford.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY F. BUSKING, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO GEORGE D. MITTEN, OF SAME PLACE.

SHAFT-STRAIGHTENER.

SPECIFICATION forming part of Letters Patent No. 485,735, dated November 8, 1892.

Application filed February 2, 1892. Serial No. 420,084. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. BUSKING, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Shaft-Straighteners, of which the following is a specification.

The object of my said invention is to provide a convenient and efficient tool for straightening and taking kinks out of shafting; and it consists, briefly stated, in an adjustable clamp adapted to be placed upon the shaft at the point to be straightened and embodying certain capabilities and peculiarities of construction, as will be hereinafter more particularly described and claimed. It is adapted to be hung upon and supported by the shaft to be straightened, which is of great advantage and convenience.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of an ordinary engine-lathe, partially dismantled to better show my improved straightener, containing a piece of shafting with my improved straightener thereon in position for use; Fig. 2, a side elevation of said straightener; Fig. 3, a transverse central sectional view on the dotted line 3 3 in Fig. 2, and Fig. 4 a transverse sectional view on the dotted line 4 4 in Fig. 2.

In said drawings the portions marked A represent a piece of shafting to be operated upon; B, the main bar of my improved straightener; C, a yoke centrally mounted on said bar; D, a clamp-housing pivoted to said yoke, and E adjustable bearing-blocks mounted on said bar, one on each side of said yoke.

My invention is shown in connection with an ordinary lathe, as it is most convenient to straighten shafting while mounted in such a lathe, as kinks, bends, and inequalities can easily be detected by observing a shaft while it is being revolved by the lathe and can be marked with chalk or otherwise during such revolution. Said straightener, however, is capable of being used wherever any straightener can be employed, and in practice is frequently used on shafting while it is resting in its own bearings without the necessity of taking it down. The lathe therefore is shown simply to illustrate an ordinary and convenient use of my invention, but forms no part of the invention itself.

The shaft A is a piece of ordinary shafting and is shown as mounted in a lathe in an ordinary and well-known manner, and my improved straightener is shown as mounted thereon in position for use.

The bar B is a heavy stiff bar of the required length, and preferably has grooves *b* in its sides, which serve as ways or guides for the bearing-blocks. It is of course of sufficient size and strength to resist the strain which comes upon it in straightening the shaft without being itself bent.

The yoke C is mounted upon the bar B, and preferably nearly surrounds it, as shown most clearly in Fig. 3. The bolt B′ passes through said yoke below the bar, and by this means its two sides may be clamped tightly against the sides of the bar, thus securing it firmly in position thereon. Said yoke is shown at a central point on the bar, and this is its most common location; but it may be shifted along the bar toward either end, as may be desired or as may be required by the peculiar nature of the bend or kink in the shaft which is to be straightened. The upper end of the yoke is extended up into two arms, between which the shaft passes in operation, as shown, and to the upper ends of these arms the clamp-housing is connected.

The clamp-housing D is mounted upon the arms of the yoke C and secured thereto by pins or bolts D′ and D^2. Both these bolts may be removed in separating the device; but it is more common, and I regard it as preferable, to leave one in permanently, which becomes a hinge-pivot on which said clamp-housing may turn. The other is a pin, which unites them when the device is in condition for use, and is removed when it is desired to swing the housing back for the convenient insertion or removal of the shaft. Centrally this clamp-housing contains a screw-threaded perforation, in which is mounted a clamp-screw D^3, the lower end of which carries the clamp-block d^3. The upper end of the clamp-screw preferably has a large head provided with transverse perforations adapted to receive a bar, as D^4, by which the same may be conveniently operated.

The bearing-blocks E are located upon the bar B, one on either side of the yoke C. They are bifurcated and pass astride said bar, and the lower ends have projections which enter the grooves *b* in the sides of said bar, as shown most plainly in Fig. 4, and they are thus held in position and their accidental displacement prevented. At the same time they may be moved longitudinally of the bar without difficulty, and thus brought nearer to or farther from the yoke and central operating-clamp. Each is movable independently of the other, and thus they are adapted to meet all the varying requirements of different use. The upper ends of these bearing-blocks, as well as the under side of the central clamp-block, are preferably concaved somewhat, so as to fit better upon the surface of the shaft in operation.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A shaft-straightener adapted to be hung upon and supported by the shaft to be straightened, consisting of a bar B, a yoke C, mounted centrally thereon, a clamp-housing D, pivoted to said yoke and adapted to be swung back on one pivot, a screw-clamp carried by said clamp-housing, and bearing-blocks mounted on said bar on each side of said clamp-housing.

2. In a shaft-straightener adapted to be carried by the shaft to be straightened, the combination of the bar B, the yoke C, centrally and adjustably mounted thereon, the clamp-housing D, the screw-clamp held thereby, and the bearing-blocks E, adjustably mounted on said bar on both sides of the clamp-housing, said several parts being arranged and operating substantially as set forth.

3. In a shaft-straightener, the combination of the bar B, having grooves *b* in its sides, the yoke C, mounted on said bar and secured by means of the clamping-bolt B′, whereby it is adapted to be adjusted longitudinally thereon, the clamp-housing D, secured to the upper ends of the arms of the yoke C by pivot-bolts D′ and D^2, one of which may be removed to permit said housing to hinge upon the other, the screw-clamp D^3, mounted in said housing, with the clamp-block d^3 on its lower end, and the bearing-blocks E, located one on each side of the yoke C on the bar B and formed with projections which engage with the grooves *b* in said bar, whereby they are adapted to be adjusted longitudinally thereon, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 27th day of January, A. D. 1892.

HENRY F. BUSKING. [L. S.]

Witnesses:
E. W. BRADFORD,
J. A. WALSH.