

J. N. STEVENS.
PIVOT STRAIGHTENING DEVICE.
APPLICATION FILED AUG. 5, 1913.

1,094,176.

Patented Apr. 21, 1914

FIG. 1

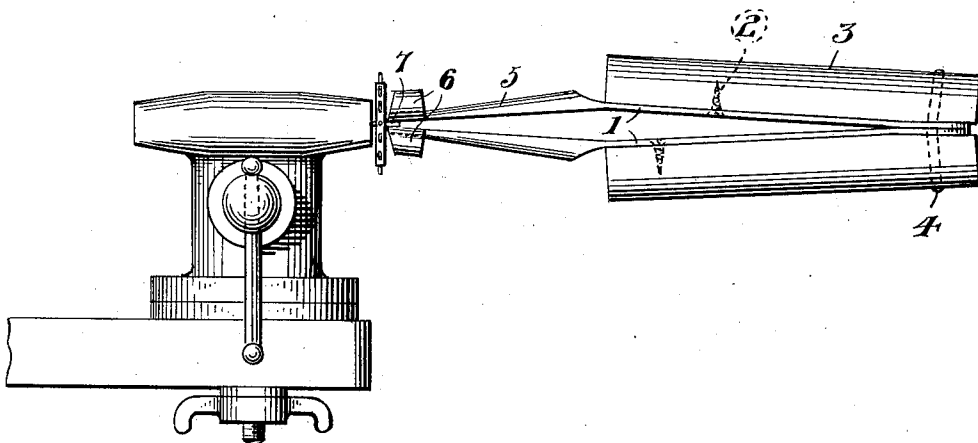


FIG. 2

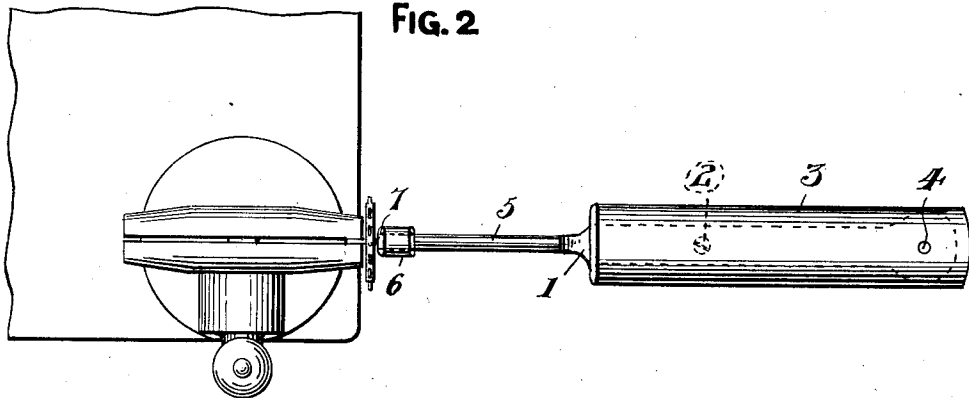
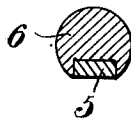


FIG. 3



WITNESSES
J. R. Appleman,
Karl H. Butler

INVENTOR
J. N. Stevens
By *Henry C. Ewert.*
ATTORNEY

UNITED STATES PATENT OFFICE.

JOSIAH NELSON STEVENS, OF PITTSBURGH, PENNSYLVANIA.

PIVOT-STRAIGHTENING DEVICE.

1,094,176.

Specification of Letters Patent.

Patented Apr. 21, 1914.

Application filed August 5, 1913. Serial No. 783,202.

To all whom it may concern:

Be it known that I, JOSIAH NELSON STEVENS, a citizen of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Pivot-Straightening Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a pivot straightening device, and the object of my invention is to provide a simple, durable and inexpensive device, constructed somewhat upon the principle of a double soldering iron, whereby heat can be applied to a desired point of a pivot in order that the pivot can be easily bent and straightened, without any danger of the same breaking, fusing or becoming distorted, due to overheating, a misapplication of the heat or too great a pressure being brought to bear upon the pivot at an inopportune time.

It is the present practice in straightening bent and crooked pivots of balance wheels and other horological elements to utilize a torch, blow-pipe or other medium for heating the bent portion of the pivot to that extent that by the use of pliers the same can be straightened for further use. In such practice extreme care must be taken that the pivot receives the proper degree of heat to render the same malleable. Often the heat is misapplied. In some instances the application of heat is excessive to the extent that the pivot fuses, while in other instances the heat is applied to the wrong portion of the pivot. When an attempt is made to straighten the pivot the same is either snapped or broken or bent at the wrong place, consequently the pivot is either imperfect or must be entirely discarded.

My invention aims to obviate the defects in connection with the present practice by providing a tool that can be easily used whereby a person can safely repair a pivot without any danger of injuring or breaking the same. The tool by which this is accomplished will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein:—

Figure 1 is a side elevation of the tool in connection with a pivot, Fig. 2 is a plan of the same, and Fig. 3 is an enlarged cross sectional view of a portion of the tool.

A tool in accordance with this invention

comprises flat arms 1 and attached to said arms by screws 2 or other fastening means are handles 3 preferably made of wood, insulation or other non-heat absorbing material which is a slow conductor of heat. The inner ends of the flat arms 1 are movably connected together, somewhat similar to a hinge, by a spring or resilient pin 4 that passes through the ends of the arms and handles 3 and it is the distortion of this pin that tends to clamp the arms together, as will presently appear.

The outer ends of the arms 1 are tapered, as at 5 and provided with heat conducting enlargements or members 6 preferably made of copper. The copper members 6 are connected to the ends of the arms by counter-sinking the ends of the arms in said members, as shown in Fig. 3 and said arms are disposed whereby the outer ends or edges thereof can be easily placed in engagement with the bent or distorted portion of a pivot 7.

When the tool is not in use the outer ends of the arms contact and are held in engagement with each other, but can be easily separated whereby the ends of the arms can be placed in engagement with the pivot. Prior to placing the tool in use, the members 6 are held in a suitable heating medium, somewhat similar to that used with a soldering iron and then the outer ends of the arms can be easily and quickly placed in engagement with the bent and distorted portion of the pivot. Of course this is accomplished while the pivot is held in a vise or other support and as the heat is applied to the bent and distorted portion of the pivot the operator holding the tool can easily determine when the pivot has been sufficiently heated to permit of pressure being brought to bear upon the tool for straightening the pivot. With a little practice the operation of straightening the pivot can be quickly accomplished and as the heating medium is controlled by the operator of the tool there is little danger of the heat being misapplied or the pivot fused by an excessive degree of heat.

The utility of the tool will be more than apparent to those skilled in the art, and while in the drawing there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claims.

What I claim is:—

1. A pivot straightening tool comprising a pair of hard metal arms, each extending at an outward inclination from each end toward the center, means for resiliently connecting the rear ends of said arms together whereby the forward end of said arms will be maintained normally apart, and when swung together the forward termini of the inner faces of said arms will engage, and a pair of soft metal heat-conducting members connected to the outer faces and side edges of said arms at the forward ends thereof.
2. A pivot straightening tool comprising a pair of arms, each of said arms inclining outwardly from each end thereof toward the center, a handle secured to the inner end of each of said arms, a resilient element connecting the inner ends of said handles and arms together whereby the forward ends of said arms will be maintained normally apart, and heat conducting members mounted upon the outer ends of said arms.
3. A pivot straightening tool comprising a pair of arms each including a flattened and a tapered portion, a handle mounted against and secured to said flattened portion, resilient means for connecting said handles and flattened portions together, and a pair of heat conducting members mounted upon and overlapping the free termini of said tapered portions.
4. A pivot straightening tool comprising a pair of arms each including a flattened and a tapered portion, a handle mounted against and secured to said flattened portion, resilient means for connecting said handles and flattened portions together, and a pair of heat conducting members mounted upon and overlapping the free termini of said tapered portions, said heat conducting members being disposed in opposite directions with respect to each other.
5. A pivot straightening tool comprising a pair of oppositely disposed semi-cylindrical heat conducting members, arms extending into the inner sides of and connected to said members, handles carried by said arms, and means for resiliently connecting the inner ends of said handle and arms together.
6. A pivot straightening tool comprising a pair of opposed arms, handles secured to the outer sides of said arms at the inner portions thereof, means for resiliently connecting said handles and inner portions of said arms together, and heat conducting members mounted upon the outer sides of said arms at the outer ends thereof.
7. A pivot straightening tool comprising a pair of opposed arms, handles secured to the outer sides of said arms at the inner portions thereof, means for resiliently connecting said handles and inner portions of said arms together, and heat conducting members mounted upon the outer sides of said arms

at the outer ends thereof and overlapping the edges of said arms.

8. A pivot straightening tool comprising a pair of opposed arms, handles secured to the outer sides of said arms at the inner portions thereof, means for resiliently connecting said handles and inner portions of said arms together, and heat conducting members mounted upon the outer sides of said arms at the outer ends thereof and overlapping the edges of said arms, said conducting members being semi-cylindrical in cross section.

9. A pivot straightening tool comprising a pair of hard metal arms provided with handles and resiliently connected together whereby the forward end of said arms will be maintained normally apart, and a pair of soft metal heat conducting members connected to the forward ends of said arms and free of the inner faces of the arms.

10. A pivot straightening tool comprising a pair of arms, a wooden handle positioned against the inner end of each of said arms and of a width greater than the width of its respective arms, means extending through the arms and partially extending through said handles for securing these latter to the arms, means for resiliently connecting said arms and handles together thereby maintaining the ends of said arms normally spaced apart, and heat conducting members mounted upon the outer faces of said arms at the outer ends.

11. A pivot straightening tool comprising a pair of arms, a handle secured to the outer face at the inner end of each of said arms, a resilient element inclining rearwardly from the center thereof toward both ends and extending through said arms and engaging in said handle and providing means for normally maintaining the outer ends of the arms spaced from each other, and heat conducting means mounted upon the outer faces of said arms at the outer ends thereof.

12. A pivot straightening tool comprising a pair of arms, a handle secured to the outer face at the inner end of each of said arms, a resilient element inclining rearwardly from the center thereof toward both ends and extending through said arms and engaging in said handle and providing means for normally maintaining the outer ends of the arms spaced from each other, heat conducting means mounted upon the outer faces of said arms at the outer ends thereof, said arms formed of hard metal, and said heat conducting members formed of soft metal.

13. A pivot straightening tool comprising a pair of hard metal arms resiliently connected together at their inner ends, and a pair of oppositely disposed soft metal heat conducting members mounted upon the outer face of said arms at the outer ends thereof and overlapping the edges of said arms at

the outer ends thereof and clear of the inner faces of said arms at the outer ends thereof.

14. A pivot straightening tool comprising a pair of arms, heat conducting members secured to the outer ends of said arms, said members being oppositely disposed with respect to each other, handles secured to the inner ends of the arms, and a coupling member formed of a single piece of material inclining rearwardly from its center toward each end and extending through the arms and engaging in the handles for connecting the arms together whereby the arms will have their outer ends normally maintained away from each other.

15. A pivot straightening tool comprising a pair of hard metal arms adapted to have their inner faces of the outer ends thereof directly engage the pivot, soft metal heat conducting members secured to the outer ends of said arms and extending in opposite directions with respect to each other, and means for connecting the inner ends of said arms together whereby the outer ends will be normally maintained spaced from each other.

16. A pivot straightening tool comprising a pair of arms having their outer ends provided with heat conducting members, said arms formed of metallic material, handles secured to said arms and of greater width than the width of the arms, and means for resiliently connecting the inner ends of the

arms and handles together, said means causing the outer ends of the arms to be normally spaced from each other.

17. A pivot straightening tool comprising a pair of arms, each of said arms inclining outwardly from each end thereof toward the center, a handle secured to the inner end of each of said arms, a resilient element connecting the inner ends of said handles and arms together whereby the forward ends of said arms will be maintained normally apart, and heat conducting members mounted against the outer faces and side edges of said arms at the forward ends thereof.

18. A pivot straightening tool comprising a pair of arms, each of said arms inclining outwardly from each end thereof toward the center, a handle secured to the inner end of each of said arms, a resilient element connecting the inner ends of said handles and arms together whereby the forward ends of said arms will be maintained normally apart, and heat conducting members mounted against the outer faces and side edges of said arms at the forward ends thereof, said handles of greater width than the width of the arms.

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

JOSIAH NELSON STEVENS.

Witnesses:

JOSEPH DEUTSCH,
KARL H. BUTLER.