

J. W. NORCROSS.
BELAYING-PIN.

No. 179,129.

Patented June 27, 1876.

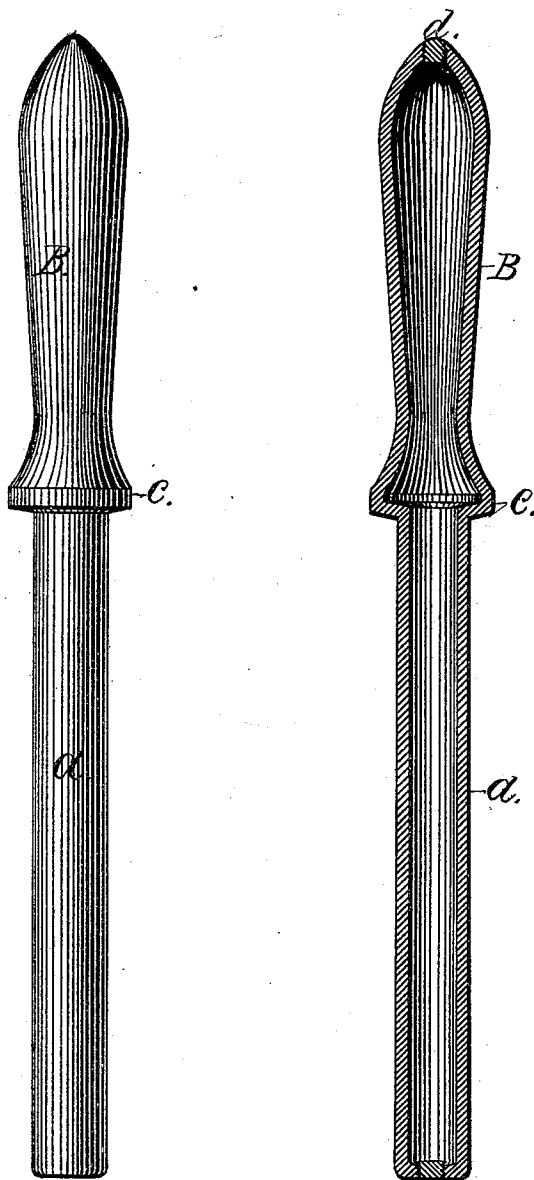


FIG. 1.

FIG. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOSEPH W. NORCROSS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN BELAYING-PINS.

Specification forming part of Letters Patent No. **179,129**, dated June 27, 1876; application filed March 18, 1876.

To all whom it may concern:

Be it known that I, JOSEPH W. NORCROSS, of the city of Boston, county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Belaying or Thole Pins; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification.

Figure 1 is a view of my improved belaying or thole pin, which, in appearance, does not differ from the ordinary belaying-pins. Fig. 2 is a section of the same, showing the uniform distribution of metal in the same, the shape of the core, and the plugs by which the holes in the ends are closed.

This invention has reference to the manner of casting and constructing belaying-pins of metal, so that a less quantity of metal will produce a stronger, lighter, and better pin, than pins as heretofore constructed.

In the drawings, *a* represents the pin proper; *B*, the handle; *c*, the shoulder formed at the junction of the pin and handle. *d* and *E* are plugs, by which the holes in the ends of the pin, through which the core is extended in casting, are closed.

Belaying or thole pins have heretofore been made either solid or cast with a hole of uniform or nearly uniform diameter from end to end. Such pins are too heavy for ordinary use, and when cast with a straight hole through their center they are still too heavy, and on account of the unequal distribution of the metal, they shrink unequally, causing a strain on the metal at the junction of the pin with the handle, where the shoulder *c*, having a large quantity of metal in close proximity to the pin *a*, having a small quantity of metal cool unequal, and this strain causes the pin to break off the handle when used for the ordinary purposes intended.

My improved belaying or thole pin, to avoid these difficulties, is cast on a core con-

forming to the configuration of the outside of the pin, so as to secure a uniform or nearly uniform thickness of metal, which will cool and contract uniformly and leave the whole without any strain caused by unequal contraction of the metal, thus producing a belaying-pin, which is lighter, cheaper, and stronger than has been heretofore possible. The core itself is stronger than the long, thin, straight core heretofore used, and is less liable to settle, thus preventing loss in casting.

The metal in my improved belaying or thole pin, being of uniform thickness, can be thoroughly annealed, and, when made of malleable iron, will be as strong as a solid pin and much lighter, therefore more convenient and desirable.

Belaying-pins, when cast with a central hole of uniform diameter, have heretofore been made with open ends. The edges of these holes are liable to injure the hands in using the belaying-pin. In my belaying-pin these holes are closed by plugs, and finished smooth and even. These plugs may be secured by heating the pin, driving in the plugs cold, so the pin can shrink and hold the same, or they may be secured in any other suitable manner, so that when the pin is finished it shall have the appearance of a solid belaying-pin.

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

1. As a new article of manufacture, the hollow belaying or thole pin, substantially as described, having such shape as to produce a pin of uniform, or nearly uniform, thickness of metal throughout, as and for the purpose set forth.

2. The hollow cast-metal belaying-pin, provided with the plugs *d* and *E*, substantially as and for the purpose specified.

JOSEPH W. NORCROSS.

Witnesses:

JOSEPH A. MILLER,
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