

J. W. NORCROSS.

BOAT-HOOK.

No. 179,127.

Patented June 27, 1876.

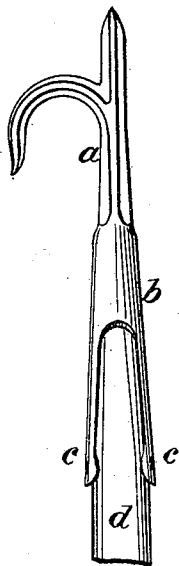


FIG. 1.

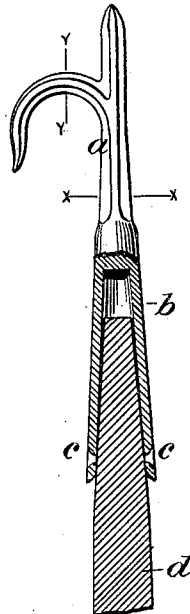


FIG. 2.

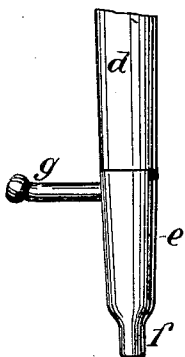


FIG. 3.



FIG. 4.

WITNESSES.

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IMPROVEMENT IN BOAT-HOOKS.

Specification forming part of Letters Patent No. **179,127**, 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 Boat-Hooks; and I do 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 boat-hook, showing both ends of the staff, the central portion being shown as broken out. Fig. 2 is a sectional view of the staff and the metal ends forming the hook and fender. Fig. 3 is a section of the boat-hook at *x x*. Fig. 4 is a section at *y y*.

This invention consists in the peculiar and novel construction of the boat-hook proper, and in the novel arrangement of the rail hook and fender, which forms a guide to indicate the position of the boat-hook proper, as is more fully set forth hereinafter.

In the drawings, *a* is the boat-hook proper, cast in malleable iron or other suitable metal. The section of the boat-hook is of a peculiar cross-shape, as shown in Figs. 3 and 4, so as to combine lightness with strength, and secure a nearly uniform distribution of metal. *b* is a slightly-tapering socket, arranged to receive the end of the staff. This socket is not so tapering as in boat-hooks heretofore constructed, and instead of ending in a point the socket ends in a square or curved end, so that a strong and solid portion of the staff, but slightly tapering, can enter the socket, and rest firmly against the end of the same. *c c* are two arms or straps opposite to each other, arranged to yield sufficiently when the staff is inserted, and made to extend to the end of the taper on the staff, where a rivet, passing through the part of the staff of the full diameter, secures the hook firmly without weakening the staff at the junction of the socket. The socket *b*, arms or straps *c c*, and staff, with the rivet, form a strong braced connection, not liable to give way or break, as this arrangement secures the greatest possible strength at a point always the weakest and most liable to give way in the old tapering socket, in which the staff had to be pointed to fit the socket, and be secured to the same at the weakest part, which part was

still more weakened by the screws or rivet with which the socket was secured to the staff.

In my improved boat-hook the strain on the hook in lifting a rope or chain, or any other strain not on a line with the axis of the staff, is resisted by the straps *c c*, the socket, and the rivet by which the same is secured to the staff.

d is the staff, made of specially-selected wood, combining strength with lightness. *e* is the cap secured to the end of the staff, opposite the boat-hook. This cap is provided with a fender-knob, *f*, arranged so as not to injure the sides of the vessel against which it is pushed. *g* is the guide or indicator, which may be of any suitable shape to readily indicate to the hand by touch the direction of the hook, it being placed so as to project from the staff in the same direction as the hook on the other end of the staff, so that in a dark night, or when the hook is under water, the side and direction of the hook can be easily ascertained.

The guide, as shown, also answers a useful purpose in forming a convenient support for the hand in pulling in the hook, and also in reaching over the rail of a ship or yacht without injuring the same, as is the case when the pointed hook has to be used for this purpose.

Instead of manufacturing the boat-hook, and so necessitating the fitting of the same to such a staff as may be procurable, I manufacture and sell the complete boat-hook, provided with the staff of specially-selected wood, the indicator, and fender, and thus supply a much superior article, and satisfy a long-felt want.

The boat-hook proper being formed of the peculiar cross-shape section shown in Fig. 4, and cast in one piece with the slightly-tapering socket and the straps *c c*, insures a uniform distribution of metal through the same, and thus allows a uniform annealing of the metal without causing any strain; a malleable cast-metal boat-hook may thus be cast in one piece, and be as strong, or nearly as strong, as a wrought-iron boat-hook, while it can be made for a much lower price.

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

1. As a new article of manufacture, the cast-

metal boat-hook of cross-shape section, so as to combine strength with lightness, provided with the slightly-tapering socket *b*, arranged to receive the end of the staff, and the straps *c c*, substantially as and for the purpose described.

2. The combination, with the cap *e*, provided with the fender-knob *f*, of the indicator *g*, ar-

ranged substantially as described, and secured to the staff *d*, at the end opposite to the hook, as and for the purpose set forth.

JOSEPH W. NORCROSS.

Witnesses:

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