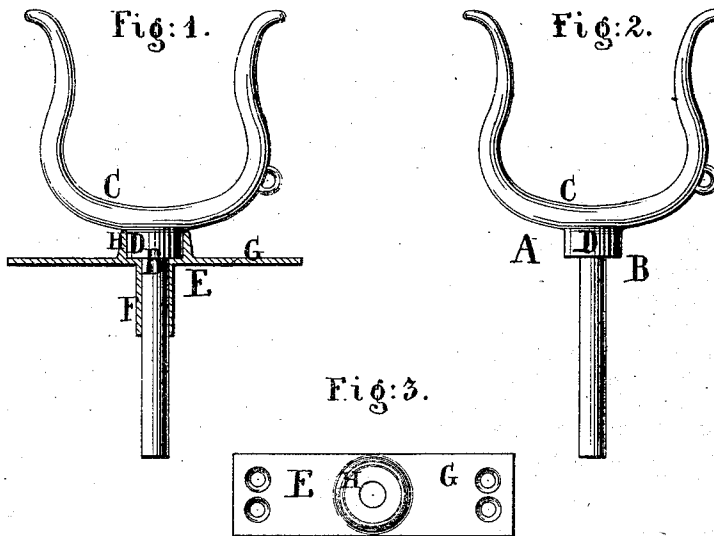


J. W. NORCROSS.

Row-Locks.

No. 155,966.

Patented Oct. 13, 1874.



Witnesses:
Chas. Wahlers.
Henry Gentles.

Inventor:
Joseph W. Norcross.
per
Van Santvoord & Hauff
Attors

UNITED STATES PATENT OFFICE.

JOSEPH W. NORCROSS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ROW-LOCKS.

Specification forming part of Letters Patent No. **155,966**, dated October 13, 1874; application filed August 19, 1874.

To all whom it may concern:

Be it known that I, JOSEPH W. NORCROSS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Row-Locks, of which the following is a specification:

This invention consists of a row-lock wherein the horn and lug are made of separate parts combined together by casting the horn upon the lug. The lug consists of a piece of round, rolled, or forged steel, of suitable length for the purpose, and of the desired diameter, which I place in a mold and cast the horn upon it in such a manner that they become solidly united with each other. The horn is cast from malleable iron or brass. The piece composing the lug may consist of round wrought-iron instead of steel.

This invention is illustrated in the accompanying drawing, in which—

Figure 1 is a vertical section of my row-lock and its socket. Fig. 2 is an elevation of the row-lock detached. Fig. 3 is a plan view of the socket.

Similar letters indicate corresponding parts.

The letter A in the drawing designates the row-lock composed of the lug B, and the horn C. The lug B consists of a piece of round, rolled, or forged steel or wrought-iron, prepared beforehand, of suitable diameter and length for the purpose desired. The horn C is made of malleable iron, or brass, or other suitable metal, and is cast in a mold upon one end of the lug in the usual mode of casting metals upon each other in such a manner that one end of the lug is contained in and firmly united to the bottom of the horn. The bottom of the horn is extended down around the lug so as to form a hub, D, which not only gives a good bearing to the lug at its upper end, but also forms a broad bearing for the horn in the socket of the row-lock. The socket E consists of a hollow tube, F, which is set in a hole bored for it in the gunwale of the boat, and which has at its upper end a plate, G, of oblong shape, provided with holes for screws in order to fasten the socket on the gunwale. The upper surface of the plate is provided with an enlarged continua-

tion, H, of the hollow tube for the purpose of receiving the hub D, which fits in and turns in the part H as the row-lock is vibrated on its lug.

My invention enables me to use a socket of small diameter, and yet obtain a lug which has the required strength, and is not liable to break from brittleness or weakness, as is common in row-locks of the ordinary construction.

A common method of construction consists in casting the horn and lug of the same metal in one piece so as to form a single casting. Such row-locks are very liable to have their lugs broken off, and in order to decrease such liability it is common to make the lugs of a considerable diameter in order to obtain greater strength, and since that part of the socket which is let into the gunwale must be correspondingly increased in diameter, it follows that the gunwale is much weakened by reason of the size of the hole made in it to receive the socket.

My invention enables me to diminish the outer diameter of the socket-tube F in ordinary-sized rowlocks about three-eighths of an inch, leaving the tube about five-eighths of an inch in diameter in its largest part, and the lug is of greatly-increased strength and toughness being made of rolled or forged steel or wrought-iron.

When a cast lug is used—as, for example, when the lug and horn are cast in one piece—it is often necessary to turn off the lug to remove any irregularities produced in the casting, and make it true cylindrically. If the casting is of malleable iron, one effect of turning off its surface after it has been annealed is to weaken it, because, in turning it off, more or less of the annealed skin is removed, in removing which the toughest and strongest portion of the lug is cut away, and, consequently, the lug is very much reduced in strength.

My invention obviates this difficulty, the lug being prepared beforehand of suitable size and material, as above described, so that when the horn is cast upon it the lug is complete and ready for use, and, besides, should it be nec-

essary to turn my lug off to true it up, it would not be weakened thereby.

What I claim as new, and desire to secure by Letters Patent, is—

A row-lock, consisting of the horn cast with a hub, D, upon a lug composed of round, forged, rolled, or wrought metal, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 13th day of August, 1874.

J. W. NORCROSS. [L. s.]

Witnesses:

J. VAN SANTVOORD,
HENRY GENTNER.