

UNITED STATES PATENT OFFICE.

THOMAS H. DUNHAM, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF OAKUM.

Specification forming part of Letters Patent No. 131,859, dated October 1, 1872.

To all whom it may concern:

Be it known that I, THOMAS H. DUNHAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in the Manufacture of Oakum; and I do hereby declare that the following is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to an improved method of manufacturing oakum, or of converting old tarred rope into assemblages of soft fibers, for calking or other purposes.

In the ordinary process the rope is always cut up into short lengths of from six to twelve inches, whereas it is a great desideratum to retain in the fibers the full length of the staple.

In my process I cut the rope into long pieces, or pieces of a length of from five to ten feet, and in the subsequent treatment the fibers retain whatever length they have within such pieces.

These long pieces I open into strands, or unstrand by hand, and then immerse the strands in a vat containing oil, which oil, by preference, is a kerosene or hydrocarbon oil. The immersion in oil is for a very short time, preferably not more than five minutes, and the oil may be either hot or cold. (Magnesia or other suitable material may be added to purify the oil and remove gummy matters.) This treatment softens the fibers of hemp, separates the gum, and restores to the fibers the oil they had lost by exposure, thereby rendering the fibers as soft and pliable as when the rope was first made. After the hemp is removed from the oil-vat it is immersed in a steam-vat (using dry steam preferably,) by which treatment the oil is driven into all the fibers of the strands. The pressure of the steam accomplishes this result almost instantly, and the pressure need not be continued for more than

a minute. After the action of the steam I introduce these strands into a drawing-machine running at very slow speed, in which machine are hetchel-pins, that draw out, open, straighten, and separate the fibers without impairing their length. Then I feed the opened fibers to a carding-machine, and in this machine form the cards into separate slivers, or oakum-slivers, which may be twisted and spun for the use of calkers.

The most important of these steps, or those which more particularly constitute my invention, consist in first separating the rope into long pieces, to retain the normal length of fiber, and in then applying the oil, as described, and driving the oil into the strands, these steps enabling me to produce the long sliver, soft, pliable, and filled with tar, and in the finest possible condition for calking, in contradistinction to the present bunches of short fiber, which, at best, are dry and hard, and have not that adhesiveness which is of first importance in calking the seams of vessels.

By my improved method all the tar present in the old rope or junk is retained in the fibers, the treatment causing no loss of tar at any step, whereas in the common method of making oakum much of the tar (probably from twenty to thirty per cent.) is lost.

Before introducing the strands to the drawing-machine they may pass through breaker-rolls to soften the fibers.

I claim—

The improvement in the manufacture of oakum, consisting in the method of treating the rope, strands, and fibers, substantially as described.

THOMAS H. DUNHAM.

Witnesses:

FRANCIS GOULD,
S. B. KIDDER.