

UNITED STATES PATENT OFFICE.

THOMAS H. DUNHAM, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF OAKUM.

Specification forming part of Letters Patent No. **220,358**, dated October 7, 1879; application filed February 14, 1879.

To all whom it may concern:

Be it known that I, THOMAS H. DUNHAM, of Boston, county of Suffolk, and State of Massachusetts, have invented certain Improvements in the Manufacture of Oakum, of which the following is a full, clear, concise, and exact description.

Heretofore the substance called "oakum," which is ordinarily tarred flax or hemp, has generally been made either from tarred rope or in accordance with my Patent No. 146,438, granted January 13, 1874; and this oakum made from tarred flax or hemp was the only calking material used, to my knowledge, until within a few years, at which time cotton untarred was introduced, and has since been used to a considerable extent, as a calking material for light vessels and decks; but this calking is not adapted for general use as a substitute for oakum, and has not been so used, but only in seams not exposed to any great strain. This untarred cotton is objectionable, because the tendency is to absorb moisture, which soon rots the fiber and renders it useless, and also because of a tendency, when dry, to work out of the seams, and in both these respects it is much inferior to the oakum usually used.

I have invented a new article of manufacture, the article being a tarred-cotton oakum, ready for use without the preliminary hand-spinning requisite with the common oakum.

To manufacture my new article I first reduce the dry cotton to the form of a long loose fibrous and puffy strand by machinery too well known to need any description, the strand being also well known in the manufacture of cotton under several names, being most generally called a "roving," but sometimes a "sliver." This roving is uniform, or very nearly so, throughout its length, and usually about an inch in diameter, although I vary its diameter according to the size of the oakum required, as will be clear to all calkers without further description. I then lay this sliver onto an endless apron of strong cloth, which passes into and out of a tank and between a pair of squeezing-rollers. The tank being filled with boiling tar, or tar dissolved in naph-

tha, (or otherwise made sufficiently fluid,) the motion of the apron will carry the roving through the tar and between the rolls, which express the superfluous tar, the roving after leaving the feed-roll being ready for use as oakum, the strand of fiber having been reduced to the desired size before it is tarred, and constituting a new article—tarred-cotton oakum.

Two or more strands may be pressed through the tank and rollers on a wide apron as well as one strand, it being found that the strands always keep separate and distinct.

My new article differs from all other oakum known to me in that the fiber of cotton is much more uniform, both as to length and firmness of the fibers, than of hemp or flax, and also much finer than any fiber heretofore found in oakum. Its strength is also very much greater, and it will, when tarred, make a very fine compact wedge, which clings with great force to the seam, will not rot nor become displaced, and which completely fills the space between the planks, especially the apex of the wedge, all oakum when in place being wedge-shaped, but the ordinary oakum, by reason of the coarseness of its fibers, having a blunt and uneven apex, instead of the fine sharp apex produced with my new tarred-cotton oakum.

When the tar is kept at a boil it is, of course, very desirable to keep the roving always upon the feed-apron, and to insure this I use an upper apron of wire, both aprons being properly guided, so that the roving is held between them, and thus prevented from accidental displacement.

When the first roving is nearly exhausted a second is pinned to its end in a manner well known, and thus the operation is made continuous.

What I claim as my invention is—

As a new article of manufacture, the tarred-cotton oakum above described, composed of a roving of cotton saturated with tar.

THOMAS H. DUNHAM.

Witnesses:

C. H. SLADE,
GEORGE O. G. COALE.