

United States Patent Office.

ELIZA DEXTER MURFEY, OF NEW YORK, N. Y., ASSIGNOR TO THE MANHATTAN PACKING MANUFACTURING COMPANY, OF SAME PLACE.

Letters Patent No. 109,239, dated November 15, 1870.

IMPROVEMENT IN MATERIALS FOR BEARINGS AND JOURNALS.

The Schedule referred to in these Letters Patent and making part of the same.

I, ELIZA DEXTER MURFEY, of New York, county of New York, State of New York, have invented an Improvement in Journal-Bearings, &c., and in the process of manufacturing the same, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of a bearing for journals, &c., and in a process for manufacturing the same, all being too fully described hereafter to need preliminary explanation.

General Description.

Hemp, cotton, fur, or other fibrous material is formed into a loose lap by means of a carding-machine, by partially felting the fibers, or by any other suitable means.

The lap of loosely-aggregated fibers is drawn in a horizontal position against and between upright pins, which divide the lap into narrow slivers, and each of the latter is passed through a heated tube to a twisting-machine, by which it is converted into yarn.

As the sheet of fibers approaches the dividing-pins, and before the slivers are twisted, a bearing material, as powdered plumbago, soapstone, &c., is sifted onto the sheet, and becomes intimately mixed with the fibers, with which it is effectually combined when the fibers are twisted into a rope.

Paraffine, holding rubber in solution, tallow, or other suitable material, may be discharged with the powdered substances upon the sheet, or the slivers may be drawn through the liquid after being impregnated with the powder, the subsequent twisting in the heated tubes expelling all the paraffine except a gummy residuum, which serves to prevent the escape of powder from the strands when the rope is handled, and also increases the efficiency of the bearing.

After the yarns have been thoroughly impregnated with bearing-material, they are woven together in a loom, or plaited, or interlocked, or connected in any manner whereby a flat sheet or mat may be produced.

The said mat, when inserted in an axle or journal-box so as to bear uniformly on the journal, will in a short time acquire a surface, upon which the journal will turn with but little friction and without unusual heating. The bearing is more durable than those of soft metal, is cheaper, and may be effectually employed without the use of other lubricants than those used in impregnating the fibers.

The chief advantage of the bearing, however, arises from the fibers of the impregnated strands composing the mat being so firmly united that the bearing will not become disintegrated and crumble away when subjected to the excessive pressure imparted by heavy shafts or axles.

Without confining myself to the process described of impregnating the strands, or to the use of any special impregnating material,

I claim—

1. A bearing for journals, &c., consisting of impregnated yarn plaited, woven, interlocked, or otherwise connected together, so as to form a sheet or mat, as described.

2. The process of impregnating the strands by introducing the impregnating materials among fibers formed into a lap, and then twisting the latter into a yarn.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ELIZA D. MURFEY.

Witnesses:

THOMAS PRUDEN,
HENRY MCMANUS.