

# United States Patent Office.

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

Letters Patent No. 110,584, dated December 27, 1870.

## IMPROVEMENT IN THE MANUFACTURE OF MATERIALS FOR JOURNALS, BEARINGS, AND PACKINGS.

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

I, ELIZA D. MURFEY, of New York, county of New York, State of New York, have invented an Improvement in the Manufacture of Bearing and Packing Materials, of which the following is a specification.

### *Nature and Object of the Invention.*

My invention consists of a process too fully described hereafter to need preliminary explanation, whereby loose fibers and filaments and powdered substances may be uniformly mixed and combined to produce materials for packings, bearings, &c.

### *General Description.*

My improved process consists in combining fibers or filaments and powdered materials by depositing the loose fibers and powdered materials together in a uniform sheet or mass upon a suitable plate or surface, and then consolidating the mixture by the action of suitable liquids, by pressure, or otherwise.

In carrying my process into practical effect, a variety of means may be used; for instance, the two materials may be simultaneously or alternately sifted upon a plate, between which and a second and perforated plate they are clamped, and then immersed in a suitable fluid, which, when fur or wool fibers are employed, may be water; as this causes a felting of the fibers so as to partially consolidate the mass of materials, pressure or other means being employed to obtain a more condensed product.

When what is known as shoddy-felt, cotton, or filaments which will not felt are used, the mixture should be saturated with melted paraffine, glycerine, or with a liquid having in solution rubber, balsam, or other substance which will cause the adhesion of the materials or cement them together, pressure being subsequently employed, if necessary, to consolidate the mass and expel the superfluous fluid. Although the desired result may be thus obtained, I prefer to effect the deposit of the materials and the formation of the uniformly mixed mass by means of currents of air, in the manner I will now proceed to describe:

With a box or case, having at the top a detachable perforated plate or a sheet of wire-cloth, communicates a tube, connected with a pump or other apparatus, by means of which the air may be exhausted beneath the said plate; and above or adjacent to the

latter are arranged two hoppers, one containing the loose fibers or filaments, and the other the powdered material.

The fibers and powder may be simultaneously discharged in proper proportions from the hoppers upon the perforated plate by means of mechanical appliances, by their own gravity, or otherwise. I prefer, however, to employ currents of air discharged through blast-pipes across the mouths of the hoppers in such a manner as to carry both the fibers and the powder simultaneously to the plate, to which they will adhere, owing to the action of the air caused by exhausting the same beneath the plate.

By regulating the force of the blasts, or the rate at which the contents pass from the hoppers, a sheet or mass, consisting of fibers and powder in any desired proportion, and uniformly intermingled, may be obtained. This is then consolidated, as before described.

Various fibers or filamentous materials, as hemp, cotton, wool, fur, or mixtures of the same may be employed and combined, in the manner above described, with plumbago, soapstone, burnt hair, or other powdered substances, or with suitable compositions in a powdered state, and the product may be employed for packings, bearings, &c., for steps for spindles, or, cut into rings, for washers, joint-packings, and similar purposes.

### *Claims.*

1. The process herein described of combining filaments or fibers and powdered substances, that is, by depositing the loose fibers and powder in a uniform mass upon a plate and then consolidating the said mass.
2. Consolidating the mass of powder and fur or wool by subjecting it to the action of water, as set forth.
3. The process of combining fibers or filaments and powders by the action of currents of air, as described.

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

ELIZA D. MURFEY.

Witnesses:

THOMAS PRUDEN,  
LEON GEHR.