

# UNITED STATES PATENT OFFICE.

ELIZA DEXTER MURFEY, OF NEW YORK, N. Y.

## IMPROVEMENT IN MATERIAL FOR PACKINGS AND BEARINGS.

Specification forming part of Letters Patent No. **105,361**, dated July 12, 1870.

I, ELIZA DEXTER MURFEY, of New York, county of New York, State of New York, have invented an Improved Packing and Bearing, of which the following is a specification:

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

My invention consists of a sheet of paper, leather, or equivalent material, prepared and impregnated with a suitable substance or composition, as fully described hereafter, so as to form a material which may be employed in packing and stuffing boxes, &c., to form a hard, durable, and efficient packing or bearing.

### *General Description.*

The surface of a sheet of paper, leather, or chamois-skin is so operated on by a fine point or picker, or by a series of such pickers, as to separate and raise the fibers, so as to produce a flocky or felt-like surface upon a stiff, strong, and unyielding backing. This operation may be performed in any suitable machine. It has been found, however, that by subjecting the material to the action of a series of circular saws having teeth of such a shape as to penetrate but not pass through the material the flock-like surface may be imparted to the latter with great rapidity. The material thus prepared is now in a suitable condition to receive the lubricant, which may be either a simple substance, as plumbago, or any suitable composition. The lubricant is first powdered and then sifted over the flocked sheet, so that the fine powder will penetrate the interstices of the flocked surface. The sheet is then passed between rolls and compressed, and the lubricant is thus embedded in the body of the sheet, and forms, practically, a part of the same, so that it only can be separated therefrom by the disintegration of the material. In some instances I saturate the material, immediately after flocking the same, with a solution of rubber in paraffine or other solvent, or with tallow, or its equivalent, and then dry in a heated chamber, so that any excess of the solution not absorbed by the material will drip from the latter. The prepared sheet is then perforated in a suitable machine, after which the powdered lubricant is applied and secured, as before described, the pressure of the rolls forcing the lubricant into the per-

forations, forming a hard, smooth, polished sheet. This sheet, with a backing of felt, leather, or its equivalent, will be found efficient as either a packing or bearing material. In most instances, however, it is best to place a series of sheets of paper or other fabric one above the other, with one or more prepared sheets on the top, compress the whole, and fit the same to the packing or journal box, or else punch from the compressed mass blocks suitable for bearing-steps for spindles, &c. After the material is inserted in the box the bearing-surface of the same is rubbed with a suitable tool, so as to produce a highly-polished surface, it having been found that the bearing is thus rendered much more durable.

Instead of ordinary paper, parchment paper may be employed, and the paper or other material may, if desired, be flocked on both sides.

If a hard packing is not required—such a packing, for instance, as is suitable for packing pistons—the sheet need not be compressed after applying the lubricating material, but may be introduced directly into the packing-box, and the sheet, in some instances, may be perforated immediately after being flocked.

Various substances and compositions may be employed for impregnating the flocked sheet; but I have found that burnt hair, burnt paper, asbestos, or rotten-stone, either separately or together, and mixed with plumbago, ivory-dust, and sawdust, may be employed with advantage, and such compositions, alone and with addition of paper-pulp or fibrous substances, may be compressed on the surface of the flocked sheet, so as to form a hard mass capable of receiving a high polish, and very efficient as a bearing.

### *Claims.*

1. A packing or bearing consisting of a sheet of paper, or its equivalent, having a flocked surface, prepared as described, and impregnated with lubricating material.
2. The said sheet, prepared as described, and condensed under pressure.
3. A packing or bearing consisting of a sheet, flocked as described, saturated with rubber, or its equivalent, and having a lubricating composition applied to and compressed on the surface of the same, as set forth.

4. The said sheet, prepared and perforated as described.

5. The said packing or bearing material, applied to a box or bearing and polished, as set forth.

6. The combination of the said packing or bearing and a layer of felt, or its equivalent, arranged beneath the same, as specified.

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

ELIZA DEXTER MURFEY.

Witnesses:

CHARLES E. FOSTER,  
ALBERT H. NORRIS.