United States Patent Office.

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

Letters Patent No. 108,284, dated October 11, 1870.

IMPROVEMENT IN IMPREGNATING FIBROUS MATERIALS FOR PACKING, &c.

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 Impregnating Fibrous Materials with Powdered Substances, of which the following is a specification.

Nature and Object of the Invention.

My invention relates to a process too fully described hereafter to need preliminary explanation, whereby hemp, or other rope or sliver, may be thoroughly impregnated with insoluble materials in a comminuted state.

In the manufacture of packings, composed of hemp, or other rope or sliver, combined or impregnated with pulverized or comminuted insoluble materials, such as soapstone, plumbago, &c., it has been found difficult to impregnate the rope with the powdered material, the latter generally coating only the surface of the rope, so that after this surface wears away, although the greater body of the packing remains, it is comparatively useless.

I have found that a rope or sliver may be thoroughly impregnated with any insoluble comminuted material by the use of melted paraffine, or its equivalent, as a vehicle, in the following manner:

The insoluble material, such, for instance, as plumbago, hair, soapstone, &c., after being properly comminuted, is mixed with melted paraffine, tallow, or other substance, which can be dissolved and will hold the comminuted material in suspension, the mixture being constantly agitated in a heated vessel to preserve it in a fluid state, at a uniform consistency. The loosely-twisted rope or sliver is passed slowly through the mixture, with which it becomes thoroughly saturated, and is then conducted between pressure-rollers or clamps, so arranged that the excess of material pressed from the sliver will return to the vessel.

From the rollers or clamps the sliver is conducted, through a heated tube or vessel, to rollers or devices by which it is twisted into a comparatively tight rope, the heat of the tube maintaining the paraffine, or other vehicle, in such a fluid state that it will flow from the rope as the latter is twisted, leaving among the fibers or strands the insoluble material.

By the process described the rope is so thoroughly impregnated with the insoluble materials that the packing will be as efficient when half worn away as when first applied, while all the advantages of a dry packing are obtained, only sufficient of the paraffine, or other vehicle, remaining in the packing to cause the powder to adhere to the fibers.

Where a packing is required for closing joints, or for other purposes for which a hard compact rope would be unsuitable, the sliver, instead of being twisted, is merely pressed between clamps or rollers, to remove the surplus material.

Claims.

1. The process of impregnating hemp, or other rope or sliver, with insoluble materials, by passing a sliver through melted paraffine, or equivalent material, holding the powder in suspension, and then removing the paraffine, so as to leave the powder among the strands, as specified.

2. The process of removing the paraffine, or other vehicle, by simultaneously heating and twisting the rope, as set forth.

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

E. D. MURFEY.

Witnesses:
THOMAS PRUDEN,
HENRY MCMANUS.