

# UNITED STATES PATENT OFFICE.

JAMES WALTER PEELE, OF BROOKLYN, NEW YORK, ASSIGNOR OF TWO-THIRDS TO LOUISA WILLAN PEELE AND SARAH SMITH PEELE, OF SAME PLACE.

## PACKING.

SPECIFICATION forming part of Letters Patent No. 522,766, dated July 10, 1894.

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*To all whom it may concern:*

Be it known that I, JAMES WALTER PEELE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Packing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates, generally, to combination packings for steam engines, pumps and similar devices, particularly to that class in which the packing consists of material more or less resilient and absorbent. Packing of this kind as heretofore used, soiled, more or less, that part of the rod which came in contact with it. This necessitated constant watchfulness and cleaning on the part of an engineer who cares properly for his machinery.

One of the objects of my invention is to remove, as far as possible, all objections of that kind and have the rod neat and clean and free from discoloration at all times. This object is attained by having a fine metallic gloss on the wearing surface of the packing and of the same color as the rod which is given thereby a polish similar in color to itself and without any increase, but rather a decrease in the friction of the parts.

There are other objects attained by the combination of certain elementary substances and which will be hereinafter explained.

The invention consists of a new and improved method of making the packing; a bath in which the packing is treated; and in the article of manufacture all as will hereinafter be described in the specification and pointed out in the claims.

The method of treating the material of which the packing is to be formed is as follows: The material to be treated, which may be of any desired kind or combination, is cut into the desired sizes and shapes, usually in the form of rings or spirals. The packing material when so prepared is placed in a perforated receptacle of some kind to admit the air freely and the receptacle then placed in an oven and its contents heated to as high a temperature as possible without injury to the material forming the packing. When heated

entirely through their dry condition makes the several pieces highly absorbent. The material is now plunged into a fluid mass warmed sufficiently to be thoroughly limpid and containing a finely powdered metal, such as aluminium, copper, spelter or any other metal that is softer than iron. The mass is constantly agitated while the packing is immersed in order to bring the fine particles of metal in continual contact with the packing, which owing to its high absorbent power, due to the drying and heating, draws into the body of the packing the finely powdered metal, giving to the packing a substantial body of this fine metal lubricant without injury to the durable qualities of the packing as might be the case if the packing were plunged into a boiling bath. After the packing has become fully filled with the liquid mass and every interstice has been fully occupied by the particles of powdered metal, it is placed in a warm place to dry. Before it is completely dried the packing may be treated to a thin coat of the powdered metal by tumbling it in the usual way or by exposing it to the action of a rotary or other brush or polishing device. This gives the outside of the packing a perfect coating and presents a finished article of fine commercial appearance, and which if coated with metal of the same appearance as the rod, will not mar but add to the appearance of the rod working therein.

The material preferred for this purpose is made of duck alternated in layers with very thin layers of gum rubber which are coated on each side with a composition formed of three parts of gum rubber to one of finely powdered mica. This coating gives to the edges of the packing made from sheets of this material a lubricant of very high fire test as the powdered mica is a fine lubricant and indestructible by heat. The sheet can be cut into any desired shape or form and when treated by my process makes a very fine packing.

The bath or fluid mass into which the heated packing is placed and agitated in, as before stated, is preferably warmed until it becomes limpid and is preferably composed of one part of high fire test mineral oil and one part of rape seed oil, and paraffine or other wax in

the proportion of five pounds of wax to every ten gallons of the mixture of oils. To this mixture is added about two pounds of very finely divided soft metal, such as aluminium, copper, spelter or other metal softer than iron. The packing which has been previously heated and dried, when placed in this bath absorbs the different substances forming the bath. The packing is then removed from the bath and preferably partly dried, to leave on the surface among the other elements a thin film of wax, which if the packing be tumbled or polished with the powdered metal will hold on the surface of the packing a quantity of the powder, giving to the packing the fine finished appearance referred to above.

While I do not limit myself to the oils above referred to in making the bath I prefer to use blown rape seed oil on account of its high reputation as a lubricant. The mineral oil when tempered to a perfect lubricant with rape seed oil is not injurious to any part of the material or the rods. I also prefer not to use any of the animal oils as they are more or less injurious to the rubber parts of the packing and tallow is more or less injurious to the rods—pitting the iron and forming verdigris on the brass ones.

While I prefer what I term a limpid bath, baths of a higher temperature even to the boiling point may be used in carrying out my process but care should be taken when high temperatures are used not to injure the fabrics forming the packings.

What I claim as new is—

1. An improvement in the art of making packings which consists in immersing dry packing in a bath of lubricants, then removing said packings from the bath, and then drying and coating the same with a metallic powder.

2. An improvement in the art of making packings which consists in immersing dry packing in a bath of lubricants, then removing said packing from the bath and then dry-

ing the same and before completely dried coating them with a metallic powder.

3. An improvement in the art of making packings which consists in heating said packings in a high temperature, then immersing said packings in a limpid bath of lubricants, then removing said packings from the bath, and then drying the same and before completely dried coating them with a metallic powder.

4. In the art of making packings a bath for said packings composed of non animal oils, wax, and a finely powdered metal, softer than iron.

5. In the art of making packings a bath for said packings consisting of a mineral oil, rape seed oil, wax and a finely powdered metal, softer than iron.

6. In the art of making packings a bath composed of non animal oils, and wax heated to a limpid state and a finely powdered metal, softer than iron.

7. As an article of manufacture, a packing having an outer coat of finely powdered metal, softer than iron.

8. As an article of manufacture a packing consisting of a body and having as part of its elements, oils, wax, and a finely powdered metal, softer than iron.

9. As a new article of manufacture consisting of a body, oils, wax and a finely powdered metal softer than iron within the body and a coating of said powdered metal in said body.

10. As a new article of manufacture, a packing the body of which is made of layers of duck alternated with layers of gum rubber having their sides coated with a layer composed of gum rubber and finely divided mica.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES WALTER PEELE.

Witnesses:

GEO. MCCAUSLAR,  
WILMOT L. MOREHOUSE.